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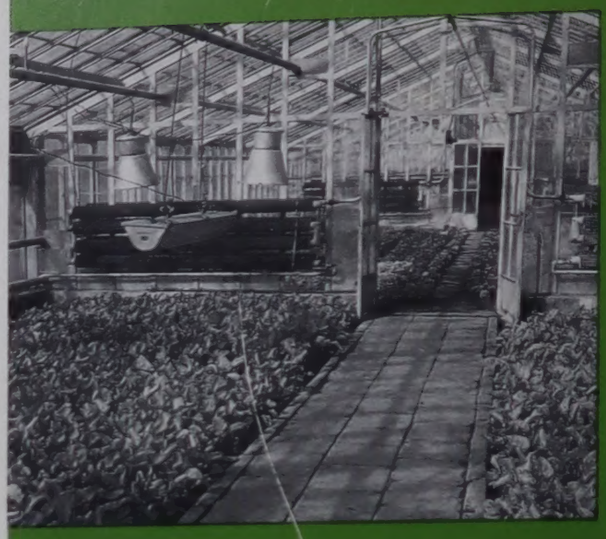


Crop breeding a production in Po have a tradition years. Exports of seeds have been for the past 30 y We supply ample information on b and the achieven science and trad plants and seeds 14—19.

Fruits in syrup are the Polish staple item in fruit processing. Anybody interested may find the relevant export offer on pp. 28—30.

One of the largest and most up-to-date meat plants in Poland in Kolo near Poznań went on stream in May 1974. You will find a report on this plant on pp. 8—9.

The outlook for dairy products an multilateral activity of the Export Storage for Polish Dairy Produce Gdynia are reviewed on pp. 35—

Exhibitions presenting Poland's achievements are organized on the occasion of th anniversary of the Polish People's Republic at various international fairs in many a country. We report on them on pp. 10—11.

Finest, Marvellous, Delicious Sweets from Poland

Exporter

AGROS

FOREIGN TRADE ENTERPRISE

ŻURAWIA 32/34, WARSZAWA, POLAND

PRODUCTION COMMERCE COLLABORATION

Animal production

Information on this subject was requested by the Editors from the Director of the Animal Production Department of the Ministry of Agriculture, Dr. Józef Luchowiec. Following are his comments.

From amongst the products supplied by agriculture, meat is of special significance. Pressure on the meat market is rapidly growing, in proportion to the growth of the living standard of the society.

Meat consumption per head and per annum reached 62.0 kg in Poland in 1973, the average increase in consumption over the last three years being 3 kg, or in other words an increase equaling that noted in France, Italy and the Federal Republic of Germany over the last 10 years. The value of animal production constituted 10.1% of the national income, whilst the share of animal products in the export of agricultural-food and agricultural products was 49.7%. Farm animals use more that 60% of the plant products produced. Around 11% of their own produce (milk for rearing calves) are used by animals, hence 89% of their production value constituting the end production of agriculture. In supplying the market, animal products made up 16.5% of these supplies in 1973.

The present structure of slaughter animal production is as follows:

pork	61.7%
beef	25.5%
veal	2.7%
mutton	1.3%
poultry	7.4%
horse meat	1.4%

As can be seen from the above given figures, pork meat is the dominating production, followed by beef and poultry.

Since 1971 conditions for the rapid development of animal production in Poland are exceptionally favourable, both as concerns economics and organization of production, as well as supply of production means. The number of head of cattle increased by 12.4%, in which case the share of cows in the structure of herds dropped from 56.1% to 49.7%, indicating intensification of young slaughter cattle production. Slaughtering of calves declined by 15%, and milk production increased by 38.8%. Pig population increased by 47.1%, and production of slaughter pigs by 38.8%. A drop was noted in sheep numbers, however due to better herd turnover, production of mutton slaughter animals increased by 6.6%, and production of wool showed a 1% increase. This situation in animal production allowed for a more than 36% increase in supplies of meat to the market.

A further rapid qualitative and quantitative increase of animal production is planned in connection with the continuing growing needs of the populace, and the planned development of exports. This development refers to both basic fields of production including slaughter cattle, milk, slaughter pigs, poultry and eggs, as well as production of mutton animals, wool, horses, and animal fur skins, and also by-products.

Production of fresh water fish will likewise increase.

In general an increase of some 50% is planned in production of slaughter animals, 30% in milk production, and around 20% in production of eggs.

Due to the envisaged decline in self supplying of the agricultural populace, the [illegible] volume of increased production will be supplied [illegible]

As concerns cattle production, the number of heads will increase by more th 19%, including some 12% in the number of cows. Production of slaugh cattle will increase by more than 64%, and thus this growth will be high than growth in the number of head of cattle. This is to be achieved by i creasing beef slaughter animals production per statistical head by over 35 due to utilization of over 85% of calves born for further production (as again 67% utilized to date), and due to expanded crossing of cattle with meat bree types of bulls.

Average milk output per cow will increase in the country by more than 15 as the numbers of cows in the structure of herds reach 45 to 50%, thereby a lowing for the production of a corresponding number of calves for fattenin The development of cooperation between State farms, cooperative farm agricultural circles, and peasant farms should allow for designating all suitab calves for fattening, to the mutual advantage of all parties concerned. Fattenin will be conducted at modern, currently being constructed farms, in which fro 750 to 3000 animals can be fattened at once under new industrial technolog methods.

The planned, rapid magnitude of cattle production in Poland is possible du to the high quality of breeding cattle — their high genetical value.

The number of cows tested for milk output will double, and the three-grad uniform system of bull evaluation elaborated two years ago will make it possibl for artificial insemination centres to use only highly certified bulls for repro duction purposes. Bulls will be evaluated both with respect to their abilit of transmitting high milk production traits, as also rapid liveweight increase at low feed consumption per kilogram of meat production. In view of the uni formity of certification, breeding of bulls is concentrated in central breedin stations conducted by the Full Breed Animal Breeding Association, whils Regional (Voivodship) Stations of Livestock Evaluation conduct milk yiel appraisal, and selection of bull progeny for breeding in given test areas. The best progeny, preferences, are evaluated for meat value in control stations.

More than 85% of cows and heifers in Poland are artificially inseminated, an hence only bulls with individual certification assuring transmission of re quired traits will be used in the nearest future for insemination.

As concerns pig production, it is planned that the number of animals wil increase by more than 31%, and production of slaughter pigs by over 40% Production of slaughter pigs per statistical head will increase by around 8% Breeding work will be directed toward improving meat pigs, and shortening the time of fattening.

Commodity crossing of pigs is in universal use. It is carried out in known pig production centres, where piggeries of a certain number of sows of one breed are kept in genetic separation from sows of other pig raising centres.

Use of boars is controlled in stations of slaughtering value control. Fattening is carried out in currently under construction large industrial-type farms with a pro duction capacity of from 6 to 36 thousand porkers annually.

It is planned to increase sheep population by 50% in relation to the present state, at a growth of wool production by 55% and of slaughter mutton animals by 90%. This will be possible due to certain trends of a selectional-breeding character obtained by inter-breed crossing, and establishment of specialized production farms for this species of animal. Fattening of sheep will be carried out in farms concentrating a large number of animals. Such farms will be se up in State farms, cooperative farms, and in agricultural centres in close cooper ation with individual farms. Quality of slaughter animals will be improved by crossing local breeds of sheep with imported meat producing breeds. Evaluation of rams for breeding purposes will be conducted at breeding centres. Uniform raw material for the production of wool will be supplied [illegible]

n Poland

se numbers will decline, this decline having a considerable significance for elopment of other types of animals by releasing feed and accommodation. tailing horse numbers will be closely connected with increasing supplies ractors and autocars for farming units, as also developing transportation ices both for and from farms. This drop in horse numbers will be implemented imiting raising of young animals for breeding purposes, and purchasing of r horses, which will be chiefly designated for export. Production of saddle ses, horses for sporting and breeding purposes designated for export will promoted.

nmodity production of rabbit meat designated for export, and partly also the internal market, is to be developed. This branch of production will conducted on the basis of modern technology in State farms, and likewise rivate farms as a supplementary activity.

increase in the production of fur skins is also planned: foxes by 30% and k by more than 19%, chiefly for export.

duction of poultry for slaughtering will be increased by more than 83%, of eggs by around 20%.

igh growth of production of almost two and one half times will take place cooperative farms.

oduction of new production technologies, of modern maintenance meth- and better utilization of ponds should allow for a more than twofold ease of fresh water fish production.

population of farm animals, pigs and cattle, has been built up to a magnitude dering achievement of high production effects on an annual basis possible. dern methods of breeding and proper selection assure rapid progress both concerns breeding and production. Organization of trade in breeding animals ducted by a special enterprise, the Federation of Turnover in Breeding mals, allows for the distribution of animals in selected regions of the country consequently their effect on the total animal population of the area. This erprise, together with the foreign trade enterprise ANIMEX, also deals in export of breeding and production animals, as also with the export of ne animals.

cialization of farms in given branches of production constitutes one of basic means for intensifying production, or in other words for increasing volume of commodities. This specialization is aimed at concentrating the duction potential of farms in a selected field of production. This is con- ted with a given direction of investments and with the professional spe- ization of the producers.

ge of specialization will be variable, and include both a narrow field, for mple exclusively breeding of sows or fattening of young slaughter cattle, also broader fields, as for example milk and beef livestock, production or n linkage of two totally different branches of animal production which are competititive for each other in the farm.

ce specialization will simplify farming, giving in effect an increase in the le of production, and mastering of a given field of production technology, sequently leading to the production of high quality commodities, and to form supplying of the market throughout the whole year.

vly introduced favourable forms of production, consisting of creating groups ndividual farmers, will result in a better utilization of land, investments, work production means. This form of production will render it possible to fully, to an optimal extent, mechanize production processes, facilitate organiza-

This constitutes a basis for the economic and organization linkage of the production efforts of single cooperating farmers. Furthermore this framework of production organization considerably improves — as compared to present conditions — the utilization of the biological base of animals (calves, piglets, lambs) by accepting progeny of animals for further production from farms which do not possess conditions necessary for the development of some fields of commodity production.

Growth of unit output of animals and increasing work output depend on modern methods of animal production, as also is proper feeding and utilization of animals.

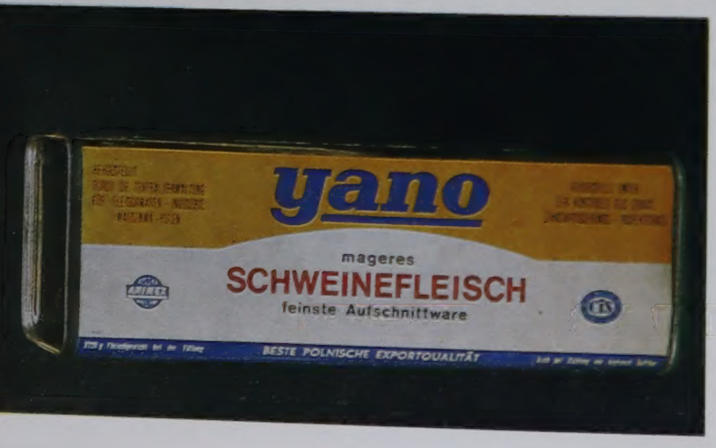
Therefore a rapid modernization of existing animal buildings is taking place, whilst new accommodations for animals are being constructed from economical materials (for example pre-fabricated elements), functionality and environmental conditions being properly maintained. There is a large selection of building designs making it possible for farmers to select suitable fields of production, and its magnitude. The existing network of building services assures rapid construction of buildings.

Feeding of animals, based chiefly on natural feeds supplemented by mixtures of feed concentrates, assures high quality of slaughter livestock and meat products processed in modern establishments.

The extensive network of branch scientific institutes, agricultural academies and the Polish Academy of Sciences allows for the introduction of practical results of research, contributing to rapid production progress. Special advisory services operating in each and every commune train farmers directly, and play an organizational role in the commune. The work of these communal advisory services is supervized by instructors from Regional Experimental Stations which are also responsible for introducing technical progress into practical production. Professional veterinary services safeguard sanitationveterinary conditions both in production, and in processing.

Delicious and economical preserves

Polish preserved products are known throughout the world. The volume of exports is increasing from year to year. Hams and meat preserves have been exported in recent years by the Foreign Trade Enterprise ANIMEX to 20 countries in 4 continents. They are being sent to almost all West European countries. Polish hams are known in the western hemisphere, with large amounts being sent especially to the United States, the main importer of hams. Polish preserved products are also known in Canada, Panama, Japan and Hong-Kong. Willing buyers are also found in North Africa and the Middle East, even in Kuwait. Poland is one of the largest exporters of tinned products and bacon in the world. The quality of Polish commodities is universally known and highly esteemed. Hams and other preserves are known for their excellent taste and aroma, as also their appetizing colour. Furthermore they keep well and are economic in the kitchen. The assortment of canned meats offered for export by ANIMEX comes in various packagings from large, designated for industrial purposes, to small family size ones. Brands of Polish canned meats are well known to consumers from store shelves and super-markets. Tinned hams and shoulder in 1 lb packagings are sold in Europe under the brands PEK, KRAKUS and YANO in England, Sweden and the Federal Republic of Germany. Most of the meat preserves in tins of 300 g are exported to the Federal Republic of Germany.



The YANO trademark is known throughout the Federal Republic of Germany and is well received by the consumer the Federal Republic of Germany. The YANO mark of Polish canned meats is an assurance of their high quality. Large tins of 6 lbs are willingly purchased by the caterings collective feeding institutions. Preserves in these packagings are economical, of suitable consistency for slicing, and appetizing after decorating with fresh vegetables. They can be consumed cold as hors-d'oeuvres, or grilled

of Germany is continuously well supplied with a large assortment of the mentioned products of which the following can be mentioned: chopped pressed pork (mageres Schweinefleisch feinste Aufschnittware), luncheon meat, pork loin, pig tongues and shoulder: pear shaped 7 lbs and oblong — 11 lbs. Consumers can be certain that pork in own juice in tins of 300 g and chopped pork (Bierschinken) in 300 gram tins are in supply throughout the whole year in every large super-market or smaller grocer's shop. A tin is sufficient for an ample meal for two. Beef in own juice — 300 g — is another very economical preserve designated for both cold and hot consumption. This preserve

is produced from lean beef, tasty and tender, especially suitable for persons seeking low caloric food. Stew from tender, lean beef in aromatic mushroom sauce is another tasty beef preserve to be consumed only hot as a dinner serving. The mentioned preserves are suitable for week-end meals, and above all in the home for working women. Minimal effort and time are necessary for an excellent effort — a tasty and healthy meal.

Kazimiera Jakubik

elicious goose and duck meat? Naturally bred? With that fine taste?

Why, geese and ducks from Poland

EXPORTER PUŁAWSKA 14, 02-512

TALKS WITH EXPORTERS

Interview with Mr. Andrzej Koźmiński, Director of the Dairy and Wild Game Office at ANIMEX

Geese and ducks from Poland

Poland is the World's biggest exporter of geese and ducks. How has this come about?

— This is largely due to the fact that we breed poultry in natural conditions. Another, most important, factor is selection of the race best corresponding to our climatic conditions. The "Pekin" breed of ducks was defined as the most appropriate by the specialists. This is a "meaty" race of excellent taste.

The selection of a goose breed was more difficult, particularly as regards exports. As the result of trials and experiments, a crossbreed proved the best. The cross was of a goose with tasty meat and the most attractive appearance, with one giving the greatest annual egg production, around thirty to be precise. The Italian/Pommeranian crossbreed is attractive, tasty and lays 40 eggs annually, permitting it to be bred successfully.

No comparison can be made between the breeding and production of geese and ducks in Poland, with world practice in breeding other poultry — chickens and turkeys for example — by industrial methods. In Poland geese and ducks are bred, as I mentioned previously, in traditional ways, on private farms. The farmers receive expert instructions, the proper fodder and several exemplary fouls from poultry factories. The goose and duck eggs are sold by the farmer to hatcheries, where they can buy goslings and ducklings for breeding purposes. The extensive method of raising ducks and geese is employed in Poland, the one exception being that ducks receive additional fodder mixtures. They both have freedom of movement and this, together with fresh air, sun, green fodder from meadows and pasture land, rich in mineral components, gives Polish ducks and geese the excellent build and ensures the development for which they are known. The poultry breeder supplies the geese to the purchasing centres affiliated to the poultry plants, three weeks before slaughtering. They are placed in pens on the so-called "fattening square" a large open-air field of many acres in size, where the number of geese undergoing fattening reaches tens of thousands. In the three weeks while they mature for slaughtering, they are fed alternatively with oats, carrot, vitamin-rich green fodder and sand to control digestive processes.

The natural, extensive manner of breeding and the special fattening process makes Polish ducks and geese enjoy an excellent meat texture and a light-gold coloured carcass, which speaks of its very high quality.

A few words now, on how the duck and goose carcasses are prepared in the poultry plants. I have heard that the slaughter line is under constant, veterinary control?

— Indeed. The state sanitary and veterinary service keeps close control over all aspects of production in poultry plants. In addition to this, all poultry exported from Poland has to go through one more quality inspection undertaken by specialists of the Quality Inspection Office. This is an independent inspection

A notable amount of manual labour is employed for exported poultry, on the slaughter line and during further processing. This is to make sure the plumage is fully removed, that the carcasses are properly shaped and that they are correctly frozen. The carcasses are vacuum packed in coloured, thermo-shrinkable bags. The inscriptions containing full information printed on the bags, together with the manner in which they are closed depend on the requests of the customers. These can be of the cry-ovac or hostaphan types.

The packed carcasses are now placed in cardboard boxes, which are then placed on pallets. All exported goods await their turn in refrigerated storage places.

To satisfy all demands, ANIMEX offers either refrigerated poultry at between —2 to —3°C, frozen poultry, stored at between —12 and 15°C, and deep frozen poultry.

Transport is usually by refrigerated trucks, equipped with units able to control the storage temperature.

The "continuous refrigerating" system is applied at all stages of the production, storage and transport process.

The Federal Republic of Germany is the principal importer of Polish poultry, the first deliveries being made in the 1930's and with the first post-war deliveries being in 1946. Where else are Polish ducks and geese found abroad?

— It is a fact that 90 p.c. of all exports of geese and some 80 p.c. of Polish duck exports go to Federal Republic of Germany and West Berlin. In absolute figures that gives 8,597.2 tons of geese and 6,276.9 tons of ducks in 1973. France, Britain, Switzerland and Austria accounted for the remaining ten per cent of geese, while the 20 per cent margin of ducks went to France, Britain, Switzerland, Austria, Holland, Spain and Lebanon.

ANIMEX, on demand, can export poultry in whole carcasses or in parts. France takes up much of its purchases in parts, but to diversify market supplies whole geese and ducks, with giblets or without, i.e. grill-poultry, are also imported. This is also the case with sales to Switzerland.

Polish-bred geese and ducks enjoy an excellent international reputation which has gained them many medals at international exhibitions. Ducks and geese won a silver medal at the 1971 Sélection Mondiale de la Conserverie in Brussels, while ducks won a silver and geese a gold medal at the same event in Paris in 1973.

It is the experience of poultry breeders, the high qualifications of poultry plant personnel and the severe veterinary and export control undertaken by the Quality Inspection Office which stand behind the high quality of Polish produced poultry. Rising demand speaks of satisfied customers, particularly in the use of correct transport methods, colourful bags and differentiated delivery dates.

To conclude this interview, could you give us a few words on the feathers obtained following on slaughter. This article enjoys an excellent opinion among foreign importers, as we know?

— The quality of feathers from Poland is the highest among all, largely due to the notable proportion of manual labour on the poultry processing line. An expression of this is the four million dollar value of Polish feathers exported in 1973. A wide range of feathers is offerred by ANIMEX, from duck and goose down, white duck plucked feathers, coloured chicken feathers and even damaged, waste feathers.

The feather processing technique shortly to be introduced to Polish poultry plants will allow slaughter productivity to be doubled, while maintaining the high quality of Polish feathers.

Interviewer: Krystyna Gąsak-Kowalczyk

ANIMEX

OFFERS

the goods specified below are known abroad for their high quality and variety. They are exported to 42 countries all over the world. Their pricipal buyers are: Italy, Great Britain, the United States, the Federal Republic of Germany, France, Austria, Switzerland, Spain, West Berlin and Sweden.

Livestock

Sport, riding, remount, draught horses.
Breeding animals: horses, cattle, pigs, sheep.
Slaughter animals: cattle, calves, hogs, sheep, horses, foals.

Meat

Frozen and chilled meat: beef, veal, pork.
Animal by-products: offals for consumption, glands for pharmaceutical purposes, horn products and gelatine.

Meat products

Bacon and bacon cuts.
Canned ham.
Ready-made dishes: frozen and hermetically sealed.
Dry and semi-dry sausages.

Game, fowls and game products

Live game and fowl: hares, roe-deer, wild boar, partridges and pheasants.
Frozen game: hares, deer, roe-deer, wild boar, wild ducks, partridges and pheasants.
Canned game.
Fur animals.
Exotic animals for Zoo.

Poultry and poultry products

Frozen poultry: geese, ducks, turkeys and chickens.
Canned poultry: whole chicken in broth, half chicken in jelly, chicken

Down and bedding feathers

Bedding feathers.
Industrial feathers.
Fancy feathers.

Eggs and egg products

Fresh shell eggs.
Frozen egg products: frozen whole eggs, frozen egg yolk, frozen egg white.
Powdered egg products: whole egg, egg yolk, egg white.
Crystallized albumin.

Dairy products

Full cream milk powder, skimmed milk powder, condensed milk.
Butter: salted and unsalted.
Hard cheeses: Tilsit, Cheddar, Gouda, and Edam.

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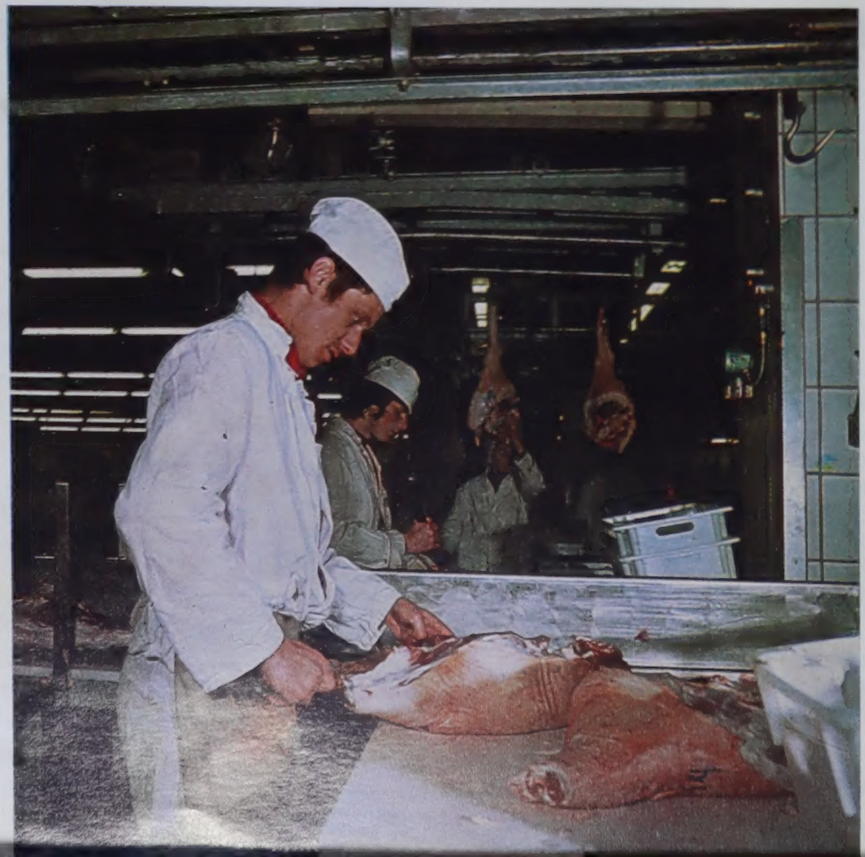
PRODUCTS FROM THE KOŁO MEAT PLANT



From the windows of international express trains passing by the district town of Koło in the east of Poznań province one can see the white walls of an enormous meat plant: the slender silhouette of the tall store-house towers against the sky, its aluminium faced walls glitter in the sun. The plant extends over an area of 40 acres, and the buildings occupy a whole 2.5 acres.

The Koło Meat Plant ranks among the biggest and most modern enterprises in Poland, together with the Meat Plants in Łuków, Lublin Voivodship and in Ełk, Białystok Voivodship.

The Koło Meat Plant was constructed under a licence from Berlin Consult, a Federal Republic of Germany company, in the record time of 18 months. The construction workers came to the building site in July 1972 and meat production started in January 1974. Naturally, the first months were devoted to test runs but since May 1, 1974 the plant has been operating at full swing. In March the Koło Meat Plant produced 70 million zlotys worth of meat products. The annual production of the plant is to reach 2.5 billion zlotys.

The construction of such a meat plant in this particular area, on the borderline of the Poznań and Łódź Voivodships was absolutely necessary because of the large scale cattle-breeding and big sales in that part of Poland. Previously cattle and pigs had to be transported for slaughter to Silesia

ousand tons of livestock a year and, working
n a one shift system, will produce 54 thousand tons
meat a year.

ne production process is ultramodern. A repre-
entative of "Food from Poland" was shown round
e various departments of the plant by Stefan
awrocki, M. Sc., assistant manager, responsible
r the plant's production.

'e started at the livestock pens and the sanitary
aughterhouse. In this slaughterhouse 240 hogs
n be slaughtered an hour, 50 head of cattle an
our and 40 calves an hour. The conveyor allows
moval of the hide in vertical position.

ter that, the slaughter meat is conveyed through
ock tunnels to refrigerators where it is refrigerated
temperatures from —5° to —10°C.

oland's biggest meat dressing chamber —
00 sq.m. — makes a breathtaking impression of
emplary order and cleanliness. Here the caracasses
e hung spaced from overhead rails and the edible
rts are separated from the others, which are sent
for further processing. At the beginning of the
oduction line, where work is very hard, men are
nployed, and then as the work becomes lighter
d not so much strength is necessary but nimble
gers, the women take over.

quartered portions are conveyed to the central
stribution room and then on to where meat
oducts, ham and canned meat are made; edible
oducts are prepared for dispatch and surpluses
e stored in refrigerators.

e Koło Meat Plant is able to deep-freeze meat in
y large portions: 3 feet 4 inches × 1.5 feet cuts,
temperatures ranging from —20° to —30.C.

e deep frozen meat is kept in a storehouse where
wheel transport has been eliminated and palle-
tion applied; it is stored in containers arranged
shelves one over the other. Storage is fully
omatic. One employee supervises all operations
m a switchboard located outside the storerooms.

e plant's modern equipment ensures higher out-
t and guarantees better quality meat and meat
ducts. In the cured meat processing department,
ich yields 35 tons daily, vacuum meat cutters
ve been installed which cut meat in vacuum
nditions, air has no access which is vital for
alth conditions. Mechanical fillers make sausages
ouched by human hand. Apart from fresh cured
ducts the department produces 12 tons a day
semidried and dried products, smoked in air-
nditioned smokehouses insulated so that the
oke does not penetrate to the production shop.

"Food from Poland" representative saw the
ty Cracow (Krakowska) sausage leave the pro-
tion line: the Koło Meat Plant produces 9 tons
Cracow sausage a day in this plant. Then came
wing of the production of smoked hams, ham
bladder and pork-loin. In the curing meat de-
tment which works on a continuous basis all
ts of canned meat and meat products were being
pared such as corned ham, luncheon-meat,
lish stew, frankfurters tongue. Canning and seal-
is fully automatic. Here a system of thermic
cessing is applied and the whole process is
trolled and registered on diagrams. The plant
ducess 35 tons of meat and meat products
ay. Products made by the Koło Meat Plant are
orted to the USA. the FRG and to Great Britain.

oments include a considerable amount of
ned meat, including the successful Polish ham.

lhing is wasted in the plant. "Practically speaking,
the pig's breath is wasted" — as one of the
loyees stated. About 5600 tons of fat are
tined a year. Post-slaughter inedible offall is
ged from the catch-basins and processed

Intestines are used as meat casings. and also exported. Hormones go to the pharmaceutical industry.

Thanks to automatic production lines meat never leaves the production shops and magazines. Automated transport restricts handling by the workers. The full refrigeration chain with suitable parameters of chilling and refrigeration in the respective phases of production guarantees good quality. Other factors determining the quality include full scale automation of the production process, vacuum sealing and recording of temperature in thermal processing. To a considerable degree automatic equipment has replaced labour and computers have taken over from people in doing the plant's accounting and payments to producers. The livestock delivered at the plant is weighed automatically and the weights are registered by computers.

The quality of meat and meat products is examined and assessed by the plant's laboratory and in December 1974 another laboratory for veterinary health inspection will start operating.

The workers are provided with facilities such as dressing rooms, bathrooms, showers, medical and dental care which provide good health conditions and a happy, healthy atmosphere.

The Koło Meat Plant, located outside the metropolitan area for health reasons, is one of the many giant projects in the Polish food industry's plans for the next 5 years. All these projects are targeted to ensure Polish products a reputation of Polish is the best.

Polish products known in the world

Exhibition grounds in Essen

"POLAND – 1974" IN ESSEN

"Polish Week", an event advertized as "Poland — 1974", will be held in Essen (Federal Republic of Germany) on October 31 — November 10 this year. It will include an exhibition organized in the fair grounds of Grugapark, the biggest recreation complex in the Ruhr Basin.

The purpose of the exhibition as well as the accompanying events of technical, scientific and cultural character is to present the achievements and social, economic and cultural prospects of development. Poland will present the potential of her leading industries, particularly those which can develop in cooperation with the FRG.

A wide and diversified offer of Polish foreign trade is oriented both at trade circles and consumers. The exhibition will have a number of attractive features such as fishion shows, sales etc.

Among numerous branches one which will be particularly emphasized will be the agricultural and food industry. The following foreign trade enterprises will be housed in hall No. 4: AGROS, ANIMEX, POLCOOP and RYBEX.

AGROS will present a full variety of Polish vodkas to mention but Wyborowa, Luksusowa, Jarzębiak (Rowan), Krakus, Żubrówka (Bison) brands. They will be sold during the exhibition, while Wódka Wyborowa can be enjoyed at special try-outs.

AGROS exports also fruit wines, meads to name but "Babunia", "Staropolski", "Wawel" and excellent "Żywiec" and "Okocim" beer.

AGROS will present a full assortment of fruit and vegetable preserves, deep-frozen fruit and vegetables as well as forest fruits. It will include mushrooms — well known to German consumers in variou[illegible] / invited to Polish

Confectionery will be shown by three producers: "Goplana", "Wawel" and "E. Wedel" which will include fruit sweets assortment, coconut chips, sweetmeats, chocolate coated caramels with stuffing called "Choco sweets" and crips cakes.

ANIMEX will present Polish meat preserves known on the market of the Federal Republic of Germany by its brand name "Yano". Both at the try-outs and at the sales there will be served: beef in natural sauce, pork in natural sauce, Bierschinken as well as geese, chicken, turkeys and ducks. Advertized as "Wildbret aus Polen für Feinschmecker" ANIMEX will introduce wild game preserves such as wild boar pate, deer filets, rabbit pate, deer goulash, partridges with champignons in butter.

Colour slides will show Polish sports horses.

POLCOOP as well as AGROS will present fruit and vegetable preserves sold under the "Krakus" trade mark: jams, stewed fruit, vegetable preserves to name but cucumbers, asparagus, peas, beans. POLCOOP will also present frozen rabbit carcasses which are in big demand abroad, as well as preserves: rabbit ragout, rabbit with champignons, rabbit in tomato sauce. Among edible seeds there will be different varieties of beans, peas and poppy seed.

RYBEX will present: Baltic sprats in oil, smoked eel in oil, cod liver, fish pâté, which are well known and sought after on the market of the Federal Republic of Germany.

We have presented a general outline of Polish food and agricultural products. We hope that our Readers will visit Polish stands in Hall No. 4 in Grugapark and try out our products at the BALTONA stand.

POLISH SPECIALTIES AT THE 1974 PARIS FAIR

At the 1974 Paris Fair the Polish exhibition was especially attractive ranking first among the "nations étrangères" displays with a pavilion covering 3,600 sq.m.

The Polish exhibition was organized under the slogan: "Voici la Pologne à la Foire de Paris 1974 à l'ocassion du 30-ème anniversaire de la République Populaire de Pologne".

Next to machines and equipment, consumer durables and service — food items occupied a substantial part of the Polish pavilion.

The stand named "Polish specialities for everyone" displayed a wide choice of foodstuffs very well known in France. The Polish farming and food industry was represented by 6 exporters: AGROS, ANIMEX, HORTEX, POLCOOP, ROLIMPEX and RYBEX.

At the movie-theatre films on Polish saddle horses of high world renown were shown non-stop at the Polish pavilion to everybody interested in this sport.

Polish horses were also advertised at another Polish stand, namely that of the ORBIS Polish Travel Office which recommended holidays in the saddle as one of attractions of vacations in Poland.

Next to ORBIS, also LOT Polish Airlines were offering their services, and in the department of shipping — the Polish Ocean Lines and Polish Steamship Company had their information centre.

The business programme was expanded by branch meetings organized by Polish enterprises: AGROS in cooperation with its agent R. Dalacupeian, and ANIMEX together with ASIPEG, the Polish-French Company. Both conferences were attended by experts from the food branch, who — after a brief professional information and a film show, availed themselves of the opportunity to sample the Polish national dishes. But the Polish exhibition was not addressed to businessmen only; the Paris Fair is visited by more than a million guests who are used to find various attractions at domestic and — especially — foreign stands. The Polish pavilion also offered such attractions. Two fairs were organized in the food section: — of alcoholic beverages by R. Dalacupeian who offered free drinks to the visitors; and another — by Polish BALTONA from Gdynia, which was selling the excellent Polish frozen ducks, and several times a day organized tasting of roasted ducks. The stands were crowded by customers who were leaving pleased with multi-coloured shopping bags, and frequently carrying small gifts.

In the "What do you know about Poland" contest the prizes were 12 gift baskets with a rich choice of Polish fancy food. They were enthusiastically received by the winners.

The Polish pavilion was visited by high-ranking French officials, Mr. Alain Poher at that time the acting President of the French Republic, and by Mr. Ives Guena, Minister of Trade, Industry and Handicraft, who had opened the Fair.

THE SALIMA FOOD FAIR IN BRNO

It was for the first time that a specialized event in the foodstuffs line was organized in one of the CMEA countries under the key-note "The food products of the world — the fruits of the earth — the labour of man". In SALIMA held on February 22 — March 6 there participated 561 exhibitors from 33 countries, including 165 exhibitors from the member countries of the CMEA and 396 from other countries.

The total exhibition area of SALIMA was 14,000 sq. m. The most noteworthy among those from the non-CMEA countries were exhibitors from the Federal Republic of Germany who — on an area of 1657 sq. m. presented products of world-known firms.

Large stands were also organised by Austria, Italy, Denmark, Holland and France. Among the CMEA countries Czechoslovakia's foreign trade enterprises had a most impressing exposition of products of its food industry. Also the expositions of Hungary, Bulgaria and Romania have met with interest.

Poland was represented at the SALIMA Fair by the following enterprises: AGROS, ANIMEX, HORTEX, POLCOOP, ROLIMPEX and RYBEX. The exhibits of Poland's food and agricultural industries were appreciated both by professional circles of businessmen and fair guests. Numerous visits were paid by Western European businessmen.

According to the tradition of international fairs the management of the Brno Fair established special prizes, the "GOLDEN SALIMA" which were granted to those products and machines designed for food industry, which were specially attractive.

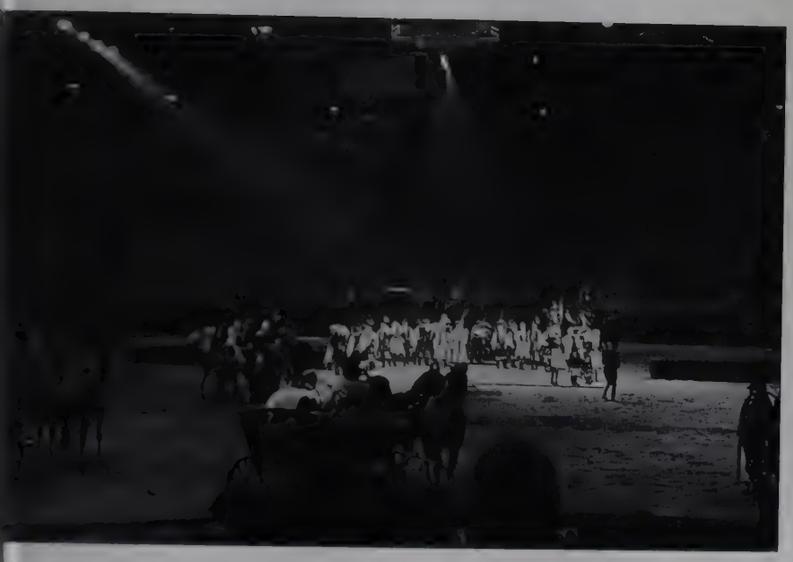
A "GOLDEN SALIMA" was granted to Polish export enterprise — HORTEX for pickled baby beetroots. The biggest number of "GOLDEN SALIMAS" was collected by the hosts. They took eight out of 22 prizes awarded at the fair.

Along with the Fair there was an exhibition organized in pavilion B presenting machines and equipment for food industry in which one of the participants was the well-known Polish foreign trade enterprise POLIMEX-CEKOP. Most of the food industry machines were presented by the Federal Republic of Germany, Austria, Italy, Denmark and Japan.

The exhibitors participating at the Fair highly appreciated the SALIMA event.

It was very well organised and in up-to-date functional pavilions. Although it was held for the first time in the history of Brno International Fairs, it was a real success, considering that the first event of this type in Czechoslovakia attracted as many as 33 countries.

POLISH HORSES AND POLISH FOLKLORE IN WEST BERLIN



An International Horsemanship Sports Hall Event (CHI) was organized at the end of 1974 in West Berlin. Riders with horses from the State Stallion Stud Farm in Bogusławice with several equipages were invited to participate in this event held in the Deutschlandhalle, as also the dance and song ensemble "Krakowiacy".

During breaks in the horsemanship events, or after their closure (frequently late at night), a total of 11 spectacles were held presenting Polish horses from the Bogusławice Stud Farm on the background of the picturesque folklore of the Kraków region. They were held against a suitably arranged background of decorations. All lights were put out in the enormous hall, and the speaker made a short announcement to the audience on the character of the presentation.

This was followed by a strong lighting of the centre of the arena where a trumpeter standing on a parquet dais played the bugle-call from the Mariacka steeple in Kraków. With the last notes of the bugle-call, the arena was filled with a group of folk musicians in regional Kraków costumes and equipages with "wedding guests".

A colourful, temperamental spectacle began, always greeted with the ostentatious applause of the crowded audience. Then four well selected and beautiful greys, four bays, four blacks and four chestnuts were hotly acknowledged, and presented their merits during a quadrille in which rode riders, first singly and then in pairs, fours and eights, during which obstacles were taken singly and in groups. The spectacle ended with a cavalcade of riders on horses during which walking pace, trot, gallop and canter were shown in turn. The spectacle was well received by the German audience. The press emphasized the excellent preparation of Polish riders and of the horses from the Bogusławice Stud Farm. The diversified spectacle was prepared by the Director of the Bogusławice Stud Farm, Andrzej Osadziński, and was carried out with bravery and precision. The beautiful folklore of the Kraków region was colourfully and with temperament presented by the dance and song group "Krakowiacy". This group is made up of authentic amateurs, from amongst which are young and good looking Kraków girls. They are guided by an experienced director and choreographer, Zbigniew Pienkowski, a person of great culture and modesty. The presentation, organized with the extensive assistance of the Foreign Trade Enterprise ANIMEX, was positively appraised in West Berlin.

10th International Food Industry Fair IKOFA — Munich

On 19—25 September this year exhibitors from 60 countries the word over had another opportunity to get acquainted with the export offer of Polish foreign trade enterprises as well as to conclude profitable trade contracts at the International Food Industry Trade Fair IKOFA in Munich.

Polish firms had a joint exposition in the hall No. 11 on an area of 400 sq.m. presenting a wide variety of their food products well-known for its top quality. They also presented many novelties in the line of food and agricultural goods. Here are some of them:

- spirits, confectionery, deep-frozen vegetables and fruits including forest fruits, fruit and vegetable preserves (exported by AGROS);
- sausages, frozen poultry and meat preserves (the YANO brand); (exported by ANIMEX);
- deep-frozen fruit and vegetables, fresh fruit and vegetables, fruit and vegetables preserves, onions, mushrooms, fresh flowers; (exported by HORTEX)
- frozen rabbit carcasses, semi-products, fruit and vegetable preserves, edible seeds and fodder; (exported by POLCOOP)
- sugar, potato products, herbs and spices, rye, oat, sugar industry products (treacle), brewing raw materials, agricultural and vegetable seeds; (exported by ROLIMPEX)
- sea fish, fresh-water fish and fish preserves; (exported by RYBEX)

The Polish Foreign Trade Enterprise — BALTONA will have its stand at the Fair where it will sell Polish food products.

Moreover, both the fair guests and businessmen had an opportunity to try out on the spot the exquisite taste of Polish grilled ducks which were served at a little bar at the ANIMEX stand or sold to be taken home.

Polish-made spirits were sold at the AGROS stand stocked with WÓDKA WYBOROWA, LUXURY Vodka [illegible] ŻUBRÓWKA (Bison Brand Vodka) and [illegible]

Reduces stresses!
Gives pleasure!
An active way of relaxing!
Horse riding is an increasingly popular pastime in affluent societies.
The number of saddle horses is rising and the stud farms are expanding.
Horse riding is almost a national tradition in Poland.
Specialized stud farms, the excellent breeding material available, highly-skilled experts — place Poland among the world's top saddle-horse exporters.
And exports are expanding, as the opinion spreads of the horses' quality and of the auctions and markets where they can be bought from: ANIMEX, Warszawa.

Horse Riding

From the Plant Breeding and Seed Production Stations

Organizational structure

The Tradition of plant breeding and seed production in Poland goes back to the sixties of the previous century. The first Polish wheat variety "Płocka" was registered in 1860. Several years later the breeding firm of A. Janasz and K. Buszczyński of world-wide fame commenced breeding work on the sugar beet. The first seed analysis station was established in Warsaw already in 1880, and became a member of I.S.T.A. since 1921.

After the Second World War State organizations took charge of plant breeding and seed production. Research work on plant production and seed production is conducted in the first place by the Institute of Plant Breeding and Acclimatization (IHAR), as also by certain specialized plant breeding undertakings associated in the Union of Plant Breeding and Seed Production (ZHRiN), and in the Union of Horticultural Seed Production and Nurseries (ZNOS). Multiplication of higher certified seeds and plants is carried out by specialized seed farms equipped with storages, seed cleaning and drying arrangements. Seed trade is in the hands of regional (Voivodship) seed undertakings which have more than 200 branches throughout the country. The foreign trade undertaking ROLIMPEX is the sole exporter and importer of seed material in Poland. Control of seed material is carried out by units directly responsible to the Ministry of Agriculture. The Ministry of Agriculture keeps a catalogue of varieties containing a register of original indigenous varieties and a list of foreign ones.

Certification of varieties

Registration in the mentioned catalogue depends upon results of official comparative tests. Only original varieties of Polish breeding can be registered, whilst the list of foreign varieties includes those of foreign origin which have been regionalized in Poland. A State Commission established by the Ministry of Agriculture constitutes the opinion giving and consultative organ in the field of variety evaluation. The Central Station (COBORU) is located in Słupia Wielka near Poznań and is subordinated directly to the Ministry of Agriculture. Experimentation is carried out on an area of around 300 hectares at 69 stations located throughout the country. In accordance with the obligatory seed legislation only certified seed is allowed in trade.

Field certification is carried out during the period of vegetation by inspectors of Regional (Voivodship) Seeding Material Inspectorates. The system of certification in force in Poland is based on the OECD certification system obligatory in this country since 1965. Certification of seeding material takes place at Seed Certifying Stations, the method of certification being based on the international rules of I.S.T.A. The seven Seed Certifying Stations in Poland are members of I.S.T.A.

Pre- and post-control tests on purity variety identity are conducted by the Central Station in Słupia Wielka in accordance with OECD methods. Poland is also a member of FIS, and takes an active part in the work of this organization. Proof of the confidence which Poland enjoys as concerns seed breeding and production is the fact that Poland was entrusted with organizing the ISTA Congress held in Poland in June 1974 in Warsaw, and the FIS Congress to be held next year in Poznań in May.

Varieties, cultivation, export

The war devastations of World War II resulted in the fact that plant breeding and seed production had to be started almost from scratch. Due to untiring efforts of Polish breeders, there are at present around 200 original Polish varieties under production, and a further 116 varieties of cereals, fodder plants and industrial crop varieties submitted. On the most part these submitted varieties are the result of breeding work carried out over the

The universal introduction and cultivation of new varieties of wheat, rye, barley, winter rape, sugar beets, fodder beets and potatoes exerted a basic influence on increasing yields per unit of area.

High yielding varieties utilizing large amounts of fertilizer, resistant to diseases and pests, adapted to mechanical harvesting were introduced. The following varieties should here be mentioned: winter wheat — Grana or Luna, winter rye — Dańkowskie Złote, Pancerne and Chrobre, barley — Piast, Gorzowski, Damazy.

Production of certified seed is increasing from year to year. The area seeded to seeds under the supervision of the Plant Breeding and Seed Production Union is around 715 thousand hectares, and has increased 3.5-fold over the last 15-year period. Contracting is carried out both in State as well as in cooperative farms, and in private enterprises. As concerns contracting of seeding material, some 50% falls to State farms (100% in the case of cereals). The supply of agricultural seeds on the internal market is recently around 600 thousand tons, of seed potatoes 1,200 thousand tons annually.

Indigenous seed production is supplemented by imports of certified seed indispensable for full coverage of fodder requirements.

Apart from the need for covering internal requirements, certified seed is also produced for export purposes, increasing from year to year.

It should be remembered that 30 years ago supplies on the market were based on imports. It was only during the period 1955—1956 that the value of exports was equal to imports. Since that time a systematic growth of seed production for export purposes is to be noted. In the year 1959 the Union of Plant Breeding and Seed Production (ZHRiN) has been established, which coordinates all matters pertaining to plants breeding and seed production. There was a 3-fold increase of seed exports from Poland during the period 1959 to 1974. The export assortment is broad, and in principle includes the full list of seeds produced in Poland. In view of the favourable climatic and soil conditions existing in Poland, as also the high measure of experience and tradition, this country is especially predestinated for developing seed production on a wide scale. Seeds of

the basis of production and ex-
s. Due to the most modern achieve-
ts of Polish breeders over the
two years, cereal seeds are being
red for export. The variety of rye
kowskie Złote is a true sensation.
tiplication foreign varieties of gras-
sugar beets and fodders occupies
gh share of exports.

ish varieties in registers of ny countries of the world

tiplication of foreign varieties was
un in Poland on a larger scale
ears ago at the time when various
ntries of Western Europe, chiefly
ntries of the Common Market,
an introducing regulations for pro-
ng their production against in-
ion of foreign varieties. However
s carried out over a period of many
s by official institutes showed
Polish varieties did not differ
respect to their value from local
eties, and in many cases were of
ier quality. Multiplication of for-
varieties has been limited in
nd only to such varieties as passed
obligatory series of tests in this
ntry, and were found satisfactory.
tiplication also allowed for the
ing of many valuable foreign va-
es under Polish climatic and soil
ditions. Some of these varieties
e been regionalized in Poland.
r thirty years of work it has been
nd that Polish seeds are highly
ied on foreign markets, and the
nomic value of many Polish va-
es frequently exceeds the value
well-known foreign breeds. This
onfirmed by the fact that many orig-
Polish varieties have been in-
lled in official registers of European
mmon Market countries, and many
er countries of Western Europe.
m amongst original Polish va-
es the following grasses have been
late registered in foreign countries:
fescue KOS and RUNO, Kentucky
e-grass SK-46, Italian ryegrass
R and SK-7, (MOCCA), Timothy
RA and SK-45, perrenial ryegrass
RO and NAKI, Westerwolth Rye-
ss: MOWESTER, orchardgrass
A and FALA, meadow fescue
IA and SK-6, French ryegrass RE-
S and SK-45. From amongst other
nts, the following were registered:
ng vetch HANKA, sainfoin SARO
POLA, crimson clover OPOLSKA,
te clover PODKOWA, fodder beets,
SUS, URSUS-Poly, CENTAUR,
NTAUR-Poly, TATAN and Mars,

Exports of cultivated plant seeds produced in Poland are not limited to our climatic zone only, although European Common Market countries are the chief importers, mainly the Federal Republic of Germany, Italy and France, and from amongst Eastern European countries — the Soviet Union. Apart from European countries, Poland exports seeds to Japan, the United States, China, Mexico, and to some countries of Africa and South America. Since we are fully aware of the significance of contacts with foreign plant breeders, agreements are being signed with foreign firms on scientific-technical and trade cooperation. This also serves as an opportunity to present Polish achievements in this field in foreign countries. On the other hand this cooperation also renders possible taking advantage of foreign achievements which are being with success transferred to Polish agriculture.

Ryszard Krzywański

Best growth
with seeds from Poland

EXPORTER: ROLIMPEX

ROLIMPEX

ISTA Congress in Poland

17th Congress of the International Seed Testing Association (ISTA) held in Warsaw June 17—22. ISTA is one of the world's oldest internaal organizations, and affiliates 114 member stations in 52 countries. Its is the development of the standard methods of sampling and testing d, and the uniform application of these methods in international seed trade. reover, the Association actively supports research in all fields of seed ntrol, and organizes conferences and training courses. It also cooperates n other international organizations, such as the FAO, FIS, ISO, OECD, IB, and AOSA, which are directly or indirectly concerned with the develop- nt of research, production, control, and trade in the field of seed. The first gress of representatives of seed testing stations from only a few European ntries was held in 1906 at the initiative of A. Voigt of Hamburg. Their mon effort and more than a dozen year long cooperation created a climate ducive to the establishment in 1924, at a successive congress in Cambridge, at Britain, of a world-wide organization, the International Seed Testing ociation. In 1974 fifty years have passed since the foundation of this im- tant organization concerned with seed production and trade. The ISTA rsaw Congress, therefore, was a jubilee one.

was no coincidence that Warsaw had been selected as the site of the jubilee ngress of the organization, being the first capital of a socialist state ever olay host to the event. This was proof of full confidence in, and recognition the production potential of Polish agriculture, with which the ISTA members nted to get better acquainted. In this way, they also expressed recognition the work of the Polish seed researchers and producers, and for their initia- s and contribution to the development of this organization.

historic Cambridge Congress was attended by a Polish delegate, Prof. Załęski of Cracow. Since that time, the Polish seed testing stations have n actively cooperating with this organization. The initial number of 5 sta- s accredited with ISTA has now risen to 7. The heads of these stations working in 6 ISTA technical committees, and numerous scientists and cticians are publishing the results of their research work in the ISTA journal ceedings of the International Seed Testing Association", thereby making ontribution to the bank of knowledge in the field of seed.

this occasion, mention is due to the fathers of seed research in Poland, h as Prof. Dr. J. Dorywalski, former head of the Seed Testing Station in rnań, an outstanding scientist, author of the first post-war work in the d of the methodology of seed testing; Prof. Dr. M. Lityński, a higly valued cialist in the field of seed biology and storage; and Dr. S. Broniewski, for- r greatly merited head of the Seed Testing Station in Cracow. Their pub- tions have many a time been the subject of discussion at previous ISTA ngresses.

n Polish organizers had prepared the Congress with great care. The Minister Agriculture, Kazimierz Barcikowski, had assumed the honorary protectorate r the Congress, and the Organizational Committee of the Congress was ded by Prof. Dr. Stanisław Starzycki, director of the Institute of Plant Culti- ion and Acclimatization. Owing to the efforts of many people, the 17th A Congress in Warsaw was very solemn, with emphasis on its jubilee aracter, and well prepared in terms of organization.

rth pointing at, is the three year long selfless work of many people from over the world who in the previous term of office worked in the Executive mmittee and in the ISTA technical committees. Their chief merits consisted the improvement of methodological regulations, raising the quality of the A journal, and finally their concern for organizational-financial matters Mention is due particularly to the work of the chairman of the Regulations Committee, J.R. Thompson of Scotland, who has contributed in a decisive manner towards bringing up to date and elaborating in detail the methodological regulations of seed testing, binding on all ISTA member countries.

The International Seed Testing Association was headed by President S. Rollin of the U.S., and A. Wold of Norway is its Honorary Secretary. In the past 3 years, a number of important organizational-methodological steps were taken, which would influence the further development and the trends of the Association activities. The Congress had been preceded by meetings of the Executive Committee and the technical committees on June 14 and 15, 1974, at which the materials for the plenary meetings had been prepared in a final manner. A Congress symposium was held June 17—19, at which 56 papers were delivered, including six papers by Polish authors. The plenary meeting lasted from June 20 to 22. Having heard reports by the chairmen of the various committees, the meeting proceeded to discuss the to-date activity of the Association, and then voted on the submitted. proposals. The meeting next elected the new ISTA authorities by secret ballot. S. F. Rollin of USA was elected President, Dr. L. Kähre was chosen First Vice-President, and Ricardo Lopez De Haro of Spain was elected Second Vice-President, A. Wold of Norway was elected Honorary Secretary.

The plenary meeting also selected (by secret ballot) the site of the next Congress, which is to be held in Madrid.

Following the conclusion of the Congress, the foreign visitors went on a week's tour of Poland. They saw the Warsaw, Wrocław, Opole, Poznań and Bydgoszcz voivodships.

They visited the major crop research and cultivation centres, among them the Institute of Plant Cultivation and Acclimatization in Radzikowo, the Plant Cultivation Station in Szelejewo; forest seed stations, among them the Laboratory of Forest Sciences of the Polish Academy of Sciences in Kórnik and herb seed, among them the Herb Industry Institute in Plewiska. Moreover, the foreign participants in the Congress visited service-control institutions, such as the Cultivable Plant Research Centre in Słupia Wielka, the Seed Control Inspectorate in Bierkowice, and the Seed Testing Station in Poznań, as well as industrial plants, agricultural production enterprises and seed storehouses (the Wielkopolska Fruit and Vegetable Factory in Pudliszki, 3 state farm factories in Bieganów, Sokołów and Żydów, and the storehouses of the Garden Seed and Tree Nursery Centre in Poznań). During this week-long, rather intensive trip around Poland, the participants in the Congress had an opportunity to get acquainted with accomplishments in the field of science, plant growing and trade in sowing seed. The visitors were also acquainted with the achievements in and the scale of economic development and the development of agricultural production in the past 30 years.

The visitors also got to know some historical and cultural monuments in Wrocław, Kórnik and Toruń (the birthplace of Nicolaus Copernicus, the world--renowned Polish astronomer) as wall as with Polish regional folklore. Wherever they visited they were received with great cordiality and hospitality, which added to the atmosphere of friendship and mutual goodwill characterizing the Congress debates.

The Warsaw Congress, irrespective of the positive evaluation on the part of the ISTA authorities and observers from other international organizations, provided people from several score countries of various continents with an opportunity to know each other better. It was one of the little publicized conferences strengthening peaceful international cooperation

J. Bartz, M. Sc.

ISTA Congress in Poland

lant seeding and breeding in greenhouses onsiderably speeds up their vegetation and. onsequently, the production of new varie- ies, sometimes even by a couple of years.

Selected single seedlings are planted in nurs eries to conduct further tests this time under natural conditions.

Selected new grain varieties are sown on ex- perimental fields to undergo time and weather conditons tests.

Plant breeding and seed production in Poland

The new varieties of garden and field plants bred at plant breeding and seed production stations undergo comprehensive laboratory tests.

Laboratory tests enable to accurately define the chemical components and morphological properties of the produced varieties.

There are many of them in Poland and they carry out the extremely important task of supplying the farming with ever better varieties of plants for human consumption, animal feed and raw materials for industry.

All plants' species encountered in this country have been embraced by breeding. The breeding stations conduct creative breeding (multiplication of new varieties) and conservative activities (reproduction of high-quality seeds). With regard to breeding methods in production of new varieties the process is taken care of by specialist scientific institutes and breeding-research posts.

The work of these centres is far ahead of the general development of farming ensuring to it both nowadays and in the future appropriate seed material adapted to modern production means. The problem of plant and seed breeding in Poland has been embraced by a comprehensive organizational and operational system based on long-term programmes.

Successes in breeding of especially valuable varieties yielding higher crops than obtained hitherto, teams of specialists, and an excellent organizational system of breeding have caused that Poland plays an important role on the world seed market. Since 1957 it has been a member of CMEA standing working group for seed problems initiating improvements in plant breeding and seed production, expansion of specialization of individual countries in seed production and coordination of rules and standards effective in seed production.

New plant varieties [illegible] additional [illegible]

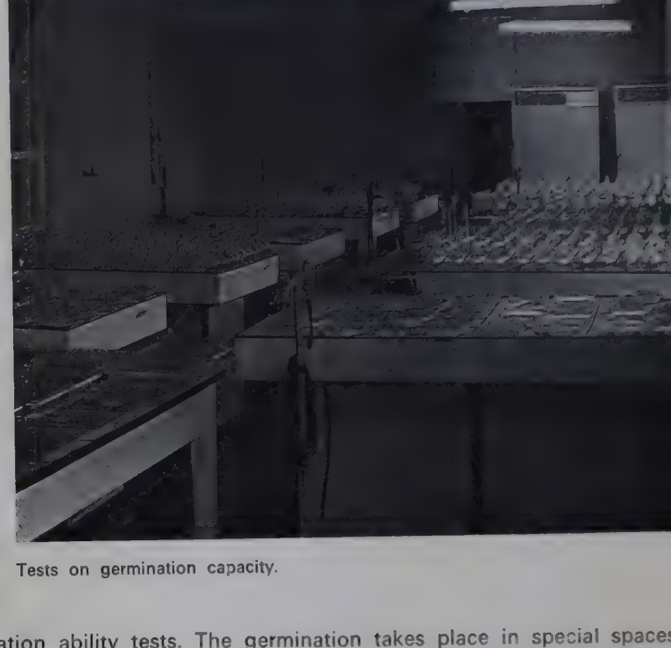
From a Seed Testing Station

difficult food situation is bothering mankind more and more.
cialized scientific and research institutes all over the world, as well as ous organizations involved in crop and seed production have to play a role ssential importance. For it is their task to supply agriculture with high-lding varieties of grain, beets, potatoes and other crops, and good, certified ds both for domestic needs and for exports.
re are several institutes in Poland dealing with scientific problems and per-ming research in this field (creative breeding included), of which the Plant eding and Acclimatization Institute does the research on the majority of cultural crops (except potatoes). Next to the institutes, crop and seed pro-tion is carried on by specializing state establishments each uniting several, even dozen-or-so breeding stations all over Poland. Breeding production is trolled by Seed Testing Stations and Crop Variety Research Centre, while litative control of certified seeds is carried out by Voivodship Certified d Inspection. Field qualification, seed inspection, appraisal of certified ma-al at Potato Seedling and Seed Testing Stations are within its range of vity.
re are 17 Seed-Testing Stations in Poland, of which 7 are registered with International Seed Testing Association (ISTA).
epresentative of our editorial staff visited one of these stations and below ner report:

meets special requirements; they are sealed and supplied with special documentation and field qualification certificates. Samples of seeds earmarked for export, or to be imported, are delivered in bags, packed according to ISTA rules.
After registration and obtaining the appropriate card, on which all test results are entered later, the samples are transferred to various sections and laboratories. Tests on soundness of the seeds belong to the phytopathological section and are carried out immediately upon receipt of the samples. The inspected material is tested here organoleptically, by inspection or laboratory methods; here its colour, glaze and flavour are determined.
Samples of seeds are sent in bags in quantities agreed upon for the given variety to determine their purity. The purity analysis consists in determining the percentage of pure seeds and that of impurities. This work is done either manually, or with a diaphanoscope, or blowers of various types (especially with regard to grass seeds), as well as other small laboratory instruments. For testing the purity of beets or grains other various modern apparatuses are applied, such as mechanical shakers for testing grain offals, the Bonn shaker for determining the grading of beets, and the "Gomper" electro-magnetic machine for pinpointing the fodder. For several varieties of seeds tests are also carried out to control their variety or type their identity.
After the purity analysis, some of the pure seeds (4×100 seeds) are set apart

Qualified seeds guarantee rich yields

Testing of seeds purity

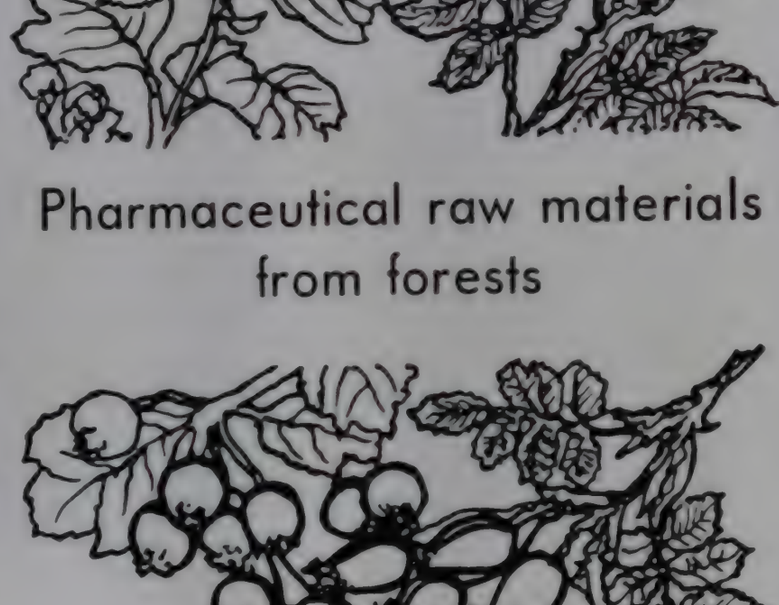


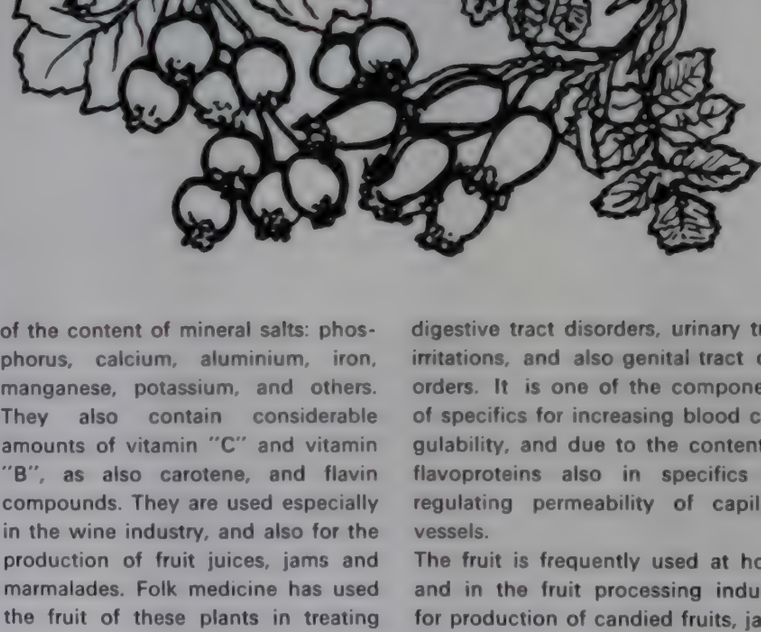
Tests on germination capacity.

e Poznań Seed Testing Station has its seat at 53, Towarowa Street, not far m the site of the International Fair. It consists of small labs well equipped th modern instruments.
m introduced to the head of the Station, Mr Józef Bartz, M.Sc., who has en working here since 1949. In 1951 he was appointed head of the Station. nce that time he has been member of the International Seed Testing Asso-tion (ISTA). In 1959, he was elected member of the Purity and Tetrasole mmittee. During the 1971 Congress in Washington, he joined the ISTA ecutive Committee as second Vice-President of this organization. He has ored extensive achievements in his professional career. He also widely con-butes to both Polish and foreign publications. Let me quote some of them: aper on variety identity of grass seeds, on germination, on determining seed ality by tetrasole method and triple comparative research (field, germinator d tetrasole). In connection with the Warsaw ISTA Congress he participates collective work on grain growth and determining grass purity.
he Poznań Seed Testing Station — says Mr. Bartz — *is Poland's oldest tion of this type. It was founded in 1876 at the former Higher School of rming at Żabikowo (Poznań voivodship). Transferred to Poznań in 1921, became registered with the International Seed Testing Association. After e Second World War, its registration was renewed. Professor Józef Dory-alski, the first head of the Station, became its member.*
e Station encompasses chiefly the Poznań area. However, because of its TA membership, it tests samples of seeds earmarked for export, or imported, o from the Szczecin area. It annually performs from 50,000 to 55,000 tests seed quality of certified seeds of grain, vegetable, herb and flower seeds, d tree, fruit and ornamental bushes seedlings.
xt to inspection and services the Station conducts research on methods of ed testing together with the Poznań Agricultural Academy and in coopera-n with the Crop Variety Research Centre at Słupia Wielka — with regard tests under the international OECD system".
tour the premises and laboratory facilities to get acquainted with the work the various sections of the Station. Only women work here — bent over e samples, gazing into microscopes, quickly selecting tiny seeds to separate to proper ones from seeds of other plants, weeds and impurities.
Yes, women are best for this kind of work — Mr. Bartz answers my remark — *r it requires much patience and accuracy, is laborious and unattractive, though extremely useful!"*
Then samples taken by official sample

for germination ability tests. The germination takes place in special spaces depending on the variety of seeds. Optimal germination conditions are created here by adapting temperature, humidity, type of soil, light and air appropriate for the tested variety of plants. Various equipment is used to obtain these conditions. In some cases these are cold rooms of a temperature ranging from 10° to 15°C; in other — thermostats allowing to maintain a temperature from 20° to 30°C, or Jacobson germinators with thermo-control. Seeds requiring room temperature germinate at a temperature from 18° to 21°C. They are in the room I am just visiting. On small plastic trays, covered with a glass plate evenly distributed are different varieties and types of seeds. The germination process is variegated. Some seeds germinate normally, in other seeds the sprouts are ill-shaped, curved or do not germinate at all.
Another kind of laboratory tests for their germination value is determining their humidity. The seed samples are delivered in air-tight containers. Tests are carried out by moisture teller method depending on the variety of seeds and their humidity. Here electric driers with thermo-control are used, as well a drying glass or metal containers.
The cytological section performs research on the content of chromosomes i cells of some plant varieties, such as beets and some grasses. Part of the roo is collected from the germinated seed, dyed with special dyestuffs, and a sampl is prepared for microscope testing. The percentage of ploidy is quoted in th quality certificates of seeds.
After all tests and analyses are carried out, seed test certificates are issued. Fo domestic use — a seed certificate and seed qualification certificate; in inter national dealings — orange certificates for lots of which sampling and ba sealing has been done by seed testing station; green certificates for lots whos sampling and bag sealing has been carried out in a country other than tha which did the seed testing and issued certificates and blue certificates — whe neither of the above mentioned certificates can be issued. The results of analysi shown in the certificate refer to the tested sample only.
International certificates may be issued only by member stations of the Inter national Seed Testing Association.
My visit at the Poznań Seed Testing Station took place several weeks prio to the International Congress of Seed Testing Association which has to b held in Warsaw. The Station expects foreign guests — Congress member whose schedules also contain a visit to this Station.
Bidding farewell to my host, Mr. Bartz, I wish him success at the Congres even greater attainments in his professional activity and more distinctions i his career in the international field as ISTA member.

Pharmaceutical raw materials from forests





Wild growing hawthorn, elder, and briar-rose are excellent pharmaceutical raw materials. Polish forests and their edges, inter-field reserves and natural plant conglomerations constitute a treasury of these valuable fruits.

The rich floristic composition of the mentioned areas maintains their biological equilibrium, whose important element is the biological self--protection of plants against pests from the plant and animal world.

This type of natural plant protection allows to avoid the use of various plant protection measures by means of chemicals, not always indifferent to the human organism. Furthermore the multi-tier growth of the forest vegetation serves as a natural barrier for protecting its fruits against industrial pollution.

Due to these favourable conditions of growth and development, the plants — which can be a source of pharmaceutical raw materials, possess a number properties, advantageous for their energetic and nutritional (dietetic) value, such as mineral components, organic acids, enzymes, vitamins, and a number of valuable micro-elements which play a major role in phytotherapy.

Of the many varieties of pharmaceutical raw materials of forest origin, the fruit of the brier rose — Rosa Canina L., is one of the most valuable, and is of considerable importance in both pharmaceutics and for the food industry.

This plant constitutes one of the richest sources of vitamin "C", occurring as a complex with vitamins "P", "K", the "B" group, and with pro-vitamin "A". The fruit of this plant contains substantial amounts of sugars, and has the highest extractability from of all amongst the fruits of natural origin. As a valuable high vitamin content raw material with a high ascorbic acid content, the fruit of the brier-rose has been acknowledged as one of the best raw materials for the production of drinkable juice, jam, marmalades and wine. It is also a valuable source of vitamins to be added to other low-vitamin products.

Apart from the fruit of Rosa Canina, the fruit of Rosa Rugosa is becoming important in food processing, since it is rich in vitamin "C", containing more than 800 mg %, as compared to 474 mg % in the fruit of Rosa Canina. The dried fruit of wild roses was always highly valued in folk therapy for treatment of states of weakness of the organism, insomnia, and a number of nervous disorders.

Modern medicine uses the fruit of wild roses — Fructus Rosae or Fructus Cynobasti — in pharmaceutical concoctions prescribed for treating a number of digestive tract disorders, kidney and liver disorders, and many others caused by vitamin "C" deficiency.

The forest management [illegible] its sites in natural condition. Rosa Rugosa is likewise the subject of extensive development conditions similar to natural are provided for its vegetation.

The fruit of many varieties of hawthorn occurring in Poland is also an excellent pharmaceutical raw material. The most popular are Crataegus oxyacantha L. and Crataegus monogyna Jacq., which apart from the number of seeds in the fruit, do not in essence differ in chemical composition. Both are similar to the wild rose fruit. They are a valuable raw material in view of the content of mineral salts: phosphorus, calcium, aluminium, iron, manganese, potassium, and others. They also contain considerable amounts of vitamin "C" and vitamin "B", as also carotene, and flavin compounds. They are used especially in the wine industry, and also for the production of fruit juices, jams and marmalades. Folk medicine has used the fruit of these plants in treating nervous disorders, circulatory disorders, and hypertension.

Modern medicine uses the dried hawthorn fruit — Fructus Crataegi, in view of its content of numerous vitamins, glucosides, and other active compounds in treating sclerosis, rheumatism, allergies, heart disorders, and hypertension. It is also used for soothing pain, treating nervous tensions and vascular coronary disorders.

The fruit is picked in Poland in September and October, that is during the period of maturing and colouring, when the content of active vitamins cal, dark blue, covered with a waxy coating, is also picked at the edge of forests and in the underbrush. The fruit ripens during sunny days in September, and is rich in sugars, free acids, tannins, pectins, and anthocyanin dyes. Recent analytic studies showed that the fruit contains ascorbic acid.

The role of this fruit was found to be of importance both in old folk medicine, and today in modern medical therapy. The dried fruit of the blackthorn (Fructus Pruni spinosae in pharmaceutics) is used for treating digestive tract disorders, urinary tract irritations, and also genital tract disorders. It is one of the components of specifics for increasing blood coagulability, and due to the content of flavoproteins also in specifics for regulating permeability of capillary vessels.

The fruit is frequently used at home and in the fruit processing industry for production of candied fruits, jams, jellies, marmalades. It is a raw material sought for in wine-making due to the high content of tannins and dye--stuffs.

In order to keep the highest content of these substances, the fruit is picked during the period of full ripeness and firmness, that is late in autumn but before the period of frosts which cause loss of firmness, softening of the fruit, and easier spoilage.

This raw material is becoming of increasing importance in the world, and Poland supplies it to many foreign markets.

terial. It grows in the underbrush of deciduous and mixed forests, at forest edges and in tree covered areas.

Elder-berries are valued for the intensive dyestuffs they contain, their fairly high content of sugars, organic acids and vitamin "C".

Sambucus nigra cultivated on plantations yields non-uniformly coloured berries, or in other words non-uniformly ripe. Elder grows in Poland under natural conditions on sunny spots and humus soil, and consequently gives well coloured berries.

Elder-berries are of importance in the processing industry, especially in the production of marmalades, jellies and wine. Fructus Sambuci has many uses in the pharmaceutical industry and for this reason is highly valued in medicine. Concoctions from elder--berries exert a therapeutic effect in a number of respiratory tract disorders, they are prescribed against flu, colds and tonsilitis, and have been found effective in a number of kindey and bladder disorders. They have been found to control metabolism, are used for treating eczema, erysipelas and other skin diseases. Folk medicine has long used elder-berries especially in cases of respiratory tract disorders, as also disorders of the nervous system and the alimentary tract.

Rowan berries, fruit of the mountain ash, Sorbus Aucuparia L., are another valuable pharmaceutical raw material. The mountain ash grows in Poland on lowlands, and also on highlands, where it assumes a bush form at higher altitudes. It is found in mixed and deciduous forests, occupying the second tier of tree stands.

Rowan berries contain a number of valuable components, such as sugars — fructose, organic acids — mainly malic acid, mineral salts, pectin and carotin. Vitamin "C" content averages 40 to 50 mg%, and vitamin "P" content is fairly high. Notwithstanding these valuable components home and industrial, use of rowan berries in the home and in industry has been relatively slight, mainly because of their distinctly bitter and acrid taste.

On the other hand the use of Sorbus Aucuparia fruit in the pharmaceutical industry is extensive. It is used as an anti-scurvy medicine, and in disorders caused by vitamin "C" and "A" deficiency. It is valued as a diuretic, and is likewise used in liver disorders, disorders of the gall bladder and of the urinary tract in general.

Conglomerations of sweet mountain ash, valuable in the food processing industry, are also found in Poland. Polish foresters have introduced the sweet mountain ash, Sorbus Aucuparia var. moravica, some time ago into natural forest plant complexes.

Poland is a foremost exporter of forest pharmaceutical raw materials and is in a position to expand the natural production base of these products as foreign demand increases.

OUR PARTNERS

Over the last couple of years economic cooperation between Poland and the Federal Republic of Germany has been marked by an especially rapid growth. Compared with 1970, the 1973 turnover has almost tripled. Consequently, the FRG has become Poland's fourth-ranking partner. Poland in turn, is FRG's third trade partner, with the GDR and the Soviet Union preceding.

Last year, industrial products accounted for only 30 per cent of Polish exports to this market. Raw materials and food produce constituted the remaining 70 per cent. The 1973 value of exports of farm produce and foodstuffs boast a tradition of long standing. Livestock products occupy a special position in these exports. Over the years 1961—1973 their exports were on a general uptrend, over 184 per cent of 1961.

The vicinity of the Federal Republic of Germany market, similar taste preferences of the consumers, especially as regards meat and pork products, finally — the specialization of the Polish processing industry to meet the requirements of this market — made the Federal Republic of Germany rank first on the list of buyers of our canned meat.

Below is an interview with the importers by a representative of our editing office.

READY INCREASE IN TRADE

The editorial office of the "Food from Poland" magazine approached Mr. Ryszard Kozyra, director, representing the Polish partner in YANO, the Polish-FRG company, domiciled at Grunwald near Munich, with a request for an interview.

On what principles does the Company operate, and what impact does it have on the trade between the two partners?

Until the mid 1973, the ANIMEX Foreign Trade Enterprise in Warsaw has operated with 6 firms including YANO in the territory of the Federal Republic of Germany, for sales of canned meat. Since October 1, 1973, YANO became the sole importer of Polish canned meat. Canned meat trade goes through different channels than the regular meat trade. The concentration of sales in this Company enabled ANIMEX to develop an appropriate trade policy beneficial for the Federal Republic of Germany economy. Possibilities of more flexible deliveries meeting the actual requirements of the market exist at present.

As of now, YANO is a Company, whose shareholders are ANIMEX on the Polish side, and FRIEGALIMENT on the FRG. The latter made available to the Company a modern sales and distribution network consisting of warehouses, 4 branch offices and several scores of trade agents operating over the entire territory of the FRG. All those factors enhance the steady, systematic increase of business. The Polish business men think highly about the Federal Republic of Germany market because of its high stability and relatively profitable exports".

Are there any special requirements as regards canned meat on the side of the importer from the Federal Republic of Germany?

The quality requirements of the market of the Federal Republic of Germany, for consumer goods in particular, are high. Taking this into account ANIMEX has worked out in detail the technologies of canned meat imported to the FRG to meet the customers' requirements, in regard to both taste and health standards. The importers from the Federal Republic of Germany trust the certificates of the Polish Quality Inspection Office controlled by the Ministry of Foreign Trade and Shipping. A scrupulous, detailed inspection precedes a strict veterinary post-slaughter inspection. The entire production process is supervised by health inspectors and the subsequent quality control of the ready product is carried out again by the Quality Inspection Office. Incidentally, note that ANIMEX never makes any changes in the technology which improve the commercial effects, but could be detrimental to the quality of exported products. Therefore Polish canned meats are renowned as high quality products".

What cans in particular are in high demand of the FRG customers?

"The range of cans exported to the Federal Republic of Germany market is, in the first place, suited to satisfy the taste of the customers. Over 80 per cent of YANO exports are bought directly by individual customers.

Most in demand are: pork in natural juice, English goulash (Bierschinken) which can be also consumed without being heated. The consumers say that beef in natural juice is an excellent dish and may be consumed both cold and hot. When heated up, it makes an excellent dinner. Its taste and flavour are extremely attractive.

Beef goulash in mushroom sauce, a typical hot dish, is another very popular item.

The remaining 20 per cent of YANO exports consists of large-size cans made for schools, hospitals, restaurants, etc.

And, I would like to add that ANIMEX products including the YANO cans, will be displayed at the "Poland-74" exhibition to be held in October-November in Essen. Availing myself of the opportunity this interview presents, I would like to invite the Readers of FOOD FROM POLAND, as well as the prospective customers, to visit the Fair of YANO meat cans in the Polish pavilion at Grugapark.

FIRST OF ALL — — QUALITY AND FLAVOUR

We speak with Mr. Alfred Vest, of the Importing Company Alfred VEST and Co., Hamburg, Federal Republic of Germany.

What has, in your opinion, been decisive for setting up and maintaining the long-standing cooperation of your Company with the Polish confectionery industry?

"This is really a cooperation of long standing, as for more than 15 years Polish sweets, exported by the Polish foreign trade enterprise AGROS, have

In spite of the most intensive competition by home and foreign companies, the import company *Alfred Vest* and Co. in Hamburg has succeeded in introducing Polish confectionery in the FRG. There is, large or small, no city in the FRG, where Polish sweets would not be sold. There are on our home market our own large-scale producers whose articles have for scores of years been introduced on markets the world over. The struggle for achievements in sales is tough, nevertheless, the product "Polish Sweets" is a mass article on our market. The success of Polish sweets is mainly a result of their quality. Polish bonbons are of excellent flavour, bonbons from Poland are top-quality articles! This is the guarantee of our cooperation".

Which of these products do you appreciate best?

"Cream Fudge of course! This is a unique, handmade product. When tasted, it melts exquisitely on the tongue, and you feel by its flavour that it has been made by the most experienced experts with the best raw materials, such as butter, cream and the like. These "Krówki" Cream Fudge are the proof that, due to old, traditional recipes and careful, hygienically irreproachable processing, a product has been thrown on the market that has found more and more customers in these hectic times.

But not only Cream Fudge has conquered a continually growing share of the federal market of sweets. There are many more of these delicious Polish sweets, such as Choco Sweets, the best confectionery made of peanuts and chocolate. It tickles the palate pleasantly! He who has tasted this delicacy once will not stop buying these chocolate sweets again and again. Outstanding quality, careful processing and an appetizing look make these chocolate dainties from Poland so popular. Well, when speaking of Polish candies you must not forget the Polish fruit bonbons. They are like a bunch of exquisite fruits, and you taste the fruit as if it were freshly plucked".

What would you like to add?

"Polish sweets are sold in the FRG not only loosely, but also in bags with the most up-to-date decorations. Most modern packing material and highly efficient packing machinery offer the possibility of supplying a wide assortment of bags for Polish sweets in the FRG. These packing machines have been assembled in the plant of the *Alfred Vest* Company and they operate there day and night.

There is no resting on laurels for any of the partners, either the AGROS enterprise, or its German importer. Incessantly, new articles are sought in order to meet the changing tastes of consumers. The packing and the layout of wrappings and bags is being continually changed and improved, while the incessant quality control improves the quality standard. All this will keep the market of the FRG open for Polish sweets also in the

Only abundant ideas, resource fulness and skilful, efficient planning of sales based on a thorough knowledge of the refined requirements of the market, and of course quality and savour, will render it possible to extend in future the hitherto success in sales of Polish sweets on the market of the Federal Republic of Germany".

FULL CONFIDENCE IN POLISH GROWERS AND EXPORTERS...

An interview with Mr. Walter E. Kohn of Frankfurt, representing ROLIMPEX in seed business within Federal Republic of Germany teritory.

Poland has an excellent reputation as an exporter of seeds, with deliveries to nearly 30 countries, including Denmark and Holland, countries which are among the top exporters of seed material. What is the standing of Polish seeds among Federal Republic of Germany importers?

"We have been buying Polish seeds for many years. I would say that confidence in the growers and the exporter is the most important here. Users of Polish seeds in the Federal Republic of Germany realize full well that they need have no worries about quality when they buy from Poland. What's more, they can even count on the quality being higher than that specified in the contract. This is just as that quality as well as true of the packing — a very important factor, are most satisfying with our Polish contacts.

I could describe the contacts between our exporter Messrs. ROLIMPEX and the trade in the FRG in seeds for field culture, for meadows (clover) and for leguminous plants, as excellent. This relates both to sales and to fulfilling contract provisions. ROLIMPEX enjoys an impeccable opinion in trade circles in the FRG as regards adherence to contract conditions and to delivery dates".

What, in your opinion, are the prospects for the seed trade between Poland and the FRG?

"The reason why the volume of trade is not such as we would desire is because the letter of the Brussels decisions on the seed trade has been most strictly implemented in the Federal Republic of Germany. These decisions are not nearly so strictly adhered to in other Common Market countries. Despite this, trade in seeds from the 1973 crop has displayed a rise.

As to the prospects, definite possibilities do exist to increase the scope of the trade. This, obviously, depends on whether ROLIMPEX will have enough seed to offer us in the types which are required by the trade. What I said relates to all groups, not excluding fodder plant seeds and vegetable seeds, which I did not mention earlier".

dark red
ripe
big
sweet
aromatic

Polish strawberries

generally recognized as best by foreign specialists!

Why just Polish strawberries?

We are unable to answer this question. Instead, we shall give you a handful of information on cultivation and production.

They grow in a moderate climate, frequently exposed to cold. Some specialists presume that the cool Polish climate is favourable since it lengthens the period of vegetation, thus increasing the flavour value of strawberries.

They are cultivated on an area of 41,000 hectares in Central, Southern and North-Eastern Poland. As a rule, they are grown on small plantations well cared for by private gardeners. The cultivation of strawberries in Poland has long standing traditions, and the liking of planters for strawberries is proverbial.

Most of the work connected with cultivation and harvesting is done by hand. Artificial fertilizers are applied to a minimum extent. Insecticides and pesticides practically are not used.

Fresh strawberries are naturally available only for a very short period of time in a year. After the strawberry season, however, the consumers have a wide choice of processed strawberries, above all frozen strawberries

Frozen strawberries

Freezing as a preservation method is of great value in comparison with other methods, and Polish industry has mastered it to perfection.

The production of frozen strawberries in Poland is handled by 35 modern plants equipped with newest installations.

The planters receive from these factories seedlings and technical equipment. A staff of instructors are always ready to provide specialized assistance.

After harvest, the planters deliver to the processing plants carefully selected strawberries which, following preliminary preparation, are almost immediately processed.

Before shipment, the ready products are subject to careful and strict control by specialists from the Quality Inspection Office.

Strawberries are transported in refrigerated trucks with mechanical refrigeration system ensuring temperatures not higher than —18°C, or in refrigerated freight-cars in which 1,500 to 2,500 kilograms of dry ice are placed, depending on the temperature outdoors and the route of the shipment.

By sea, they are carried in refrigerated holds of ships in a temperature not exceeding —18°C.

Polish strawberries are sold to many countries of the world, and everywhere they enjoy great popularity among the customers.

Poland's first place in the world as regards strawberry crops ensures large and prompt export deliveries.

S
C O
HORTEX

AGROS

CRS
POLCOOP

We invite you to Poznań

The programme of the Congress includes — apart from the discussions — visits to scientific and research institutes, seed farms and seed store-houses situated in the area of Poznań.
You will find more detailed information in the 1/75 issue of our magazine.

to FIS, the Congress of the International Seed Trade Federation to be held in Poznań on May 26-28, 1975

Pesticide residues in Polish plant products below FAO levels

ording to data released by the Food and Agriculture Organization in 1969, l losses in crops on a world wide scale are estimated at 74.9 billion dollars ually, corresponding to some 35% of the potentially possible crop yields. ual losses due to pests are estimated at around 24.8 billion dollars, and e due to weeds at 20.4 billion dollars.

rder to limit these losses in Poland, far reaching activity has been developed he field of plant protection. With this in view special quarantine and plant ection stations have been organized employing a total of some 2000 work-

There are at present 323 county and 17 regional or Voivodship Plant tection and Quarantine Stations operating in Poland. These Stations cooper- with the Institute of Plant Protection and other specialized institutes, the ose of which is to advise and supervise activities relating to plant protec- , and to register the occurrence of pathogens.

institutes work on:

forecasting outbreaks of diseases and pests,

programming of plant protection with respect to specific crops,

supplying pesticides to the various regions of the country,

instructions for servicing units carrying out plant protection measures with the use of chemical plant protection means.

carrying out plant protection measures, employees of the Stations supervise quality of services rendered, and especially check on whether proper ticides and concentrations are used for specific pests, diseases or weeds, whether validity of the pesticide used is assured. These units are, therefore, forecasting-control character appointed for the purpose of assuring proper cultural practices, and thus protecting products against chemical con- ination.

nsumption of pesticides by agriculture is increasing in proportion to the wth of the assortment supplied.

mical means are, however, applied precisely in accordance with instruc- s issued by research centres dealing with various specific plant pathogens, ler specific conditions and at fixed doses assuring effectiveness of the sure but without exposing consumers to food harmful for their health. In r to decrease risks, all chemical means for plant protection must be ap- ved by the Ministry of Agriculture on the basis of obligatory regulations before ng introduced on the market.

equesting production permits, producers of pesticides must present exten- documentation, especially as concerns toxicological tests. Results of such s are checked by the research centres of the Ministry of Agriculture.

nsequently consumption of plant protection chemical means in Poland in grams of active substance per hectare of arable lands was, for example, y 0.5 kg in 1970, and will reach around 0.9 kg in 1980.

systematically expanding trend of expanding use of chemical plant pro- ion means has induced the World Health Organization and the Food and riculture Organization to issue standards limiting pesticide residue in food ducts, to be enforced by ministries of agriculture in member countries.

ish agriculture, apart from organizational activities aimed at limiting pesticide dues, has also organized a permanent system of pesticide residue monitoring gricultural raw materials with the assistance of UNDP/FAO. Three main lytical centres according to the following specializations have been estab- ed within the frame of this system:

1) Pesticide Residue Monitoring Branch in the Plant Protection Institute,

2) Pesticide Residue Monitoring Branch in the Institute of Soil Science, Cul-

3) Pharmacology and Toxicology Branch in the Veterinary Institute in Puławy.

The first two mentioned units determine pesticide residue in plant crops during the period of harvesting, in feeds and in the soil, and also in product lots designated for export, or in those imported into the country.

At the same time three field stations have been established specializing in the determination of pesticide residue in raw material of animal origin, and cooperating with the Veterinary Institute, as also seven field stations specializing in the control of plant raw material, and subordinate to the Plant Protection Institute.

The centres are equipped with the most modern laboratory equipment (gas chromatography, spectrophotometers, etc.), and employ trained personnel who have specialized in numerous Polish and foreign research centres.

The system of residue determination at present refers to all of the basic agricultural crops throughout the country, and to various agricultural raw materials imported in larger amounts. A total of some 20 thousand samples annually are tested for pesticide residue. Monitoring for chlorinated hydrocarbons and herbicide residue was begun in 1971, and of organo-phosphorous insecticides and carbamates in 1972 as also of some fungicides, and of some other active substances, in 1973.

An analysis of results obtained to date on residue determination showed that:

— vegetables such as cabbage and carrots contain minimum residues DDT. A residue of 0.05 ppm was noted in only one region of the country (WHO) FAO limits for root vegetables is 1.0 ppm, for other vegetables 7 ppm).

— potatoes and beets contain minimum DDT residue,

— feed mixtures showed a DDT content of less than 0.5 ppm,

— soil samples showed a DDT content of less than 0.5 ppm,

— feed concentrate mixtures showed herbicide residue below the limits of detection to the methods used, that is 2.4-D below 0.003 ppm, MCPA — 0.01 ppm., linuron below 0.002 ppm, and monolinuron below 0.005 ppm,

— samples of grain taken from fields where phenoxyalkine-carboxyl herbicides were used (2.4-D, MCPA, dichlorprop, mecoprop), showed no residue, that is the level was below the tolerance 0.05 ppm accepted, for example, in Belgium, Holland and the Federal Republic of Germany.

Comparisons of DDT residue in feeds and plant raw material cropped in 1971 and 1973 showed a decisive drop in residues. This would indicate systematic improvement of the quality of these products. This is the result of prohibiting the use in Poland of persistent pesticides such as DDT for plant protection. Polish agriculture, having now sufficient knowledge on the level various active substances in cultivated plants, can properly programme plant protective measures by introducing variable application of pesticides in the various regions of the country. Results of control activities can likewise be taken advantage of in selecting the necessary pesticides for protecting specific crops. They can also serve as a source of information for public opinion as to contamination of food with pesticide residues. Results of recent tests show that the quality of Polish food products and plant raw material conforms to international standards. Analyses of several thousand samples of various plant raw material show that the level of chemical plant protection residue is systematically dropping, and is at present for below the limits defined by the World Health Organization and the Food and Agriculture Organization.

SCIENCE AND TECHNOLOGY

Monitoring pesticide residues in animal products

Prof. dr Teodor Juszkiewicz
Head of the Pharmalogical and Toxicological Branch of the Veterinary Institute in Puławy

For one thousand years man has linked his existence with exploitation of animals. Animals are for man a source in the first place of indispensable food products and numerous other raw materials, but can be taken advantage of only if they do not contain pathogenic factors. Animals are furthermore also excellent environmental indicators: they are found in the various links of the food chain and frequently point to the many various contaminations of the plant world, water and air. There can be no healthy animals in a contaminated environment, and there where there are sick animals, also man is sick.

The problem of environmental pollution and animal contamination is becoming more complex almost with every passing year. There is no doubt that biological contamination of animals and food products has now been investigated. This refers in the first place to a whole group of dangerous animal diseases and to the so called zoonoses caused by viruses, bacteria, fungi and parasites. Much attention is being given in recent years by specialists in veterinary and environmental toxicology to residues of chemical compounds, especially of pesticides in food products. Much place is likewise devoted to this problem in the daily press, which unfortunately frequently presents information in a somewhat sensational form, and thus increasing "the environmental stress" of its readers. Basically two fundamental causes can be accepted for the occurrence of pesticide residues in animal tissue and in food products of animal origin:

a) use of pesticides in plant protection, and b) use of pesticides for sanitary purposes (for human disease control), applied in animal buildings or administered internally or directly upon the skin of animals for prophylactic or therapeutical purposes. These two basic sources of contamination usually condition formation of the level of pesticide residues or their slowly decomposing metabolites. There is a distinct correlation between the average level of pesticide residue in the fat tissue of a given population of animals or humans, and the amount of pesticide applied over a given area.

It should be emphasized that in principle all chemical means applied in agriculture are to a greater or lesser extent toxic. This refers especially to pesticides which are used because of their selective toxicity in destroying living organisms (plant or animal) troublesome to man. Advantages in the use of pesticides are, however, achieved only if a pesticide is in the hands of a utilizer fully aware of the advantages and dangers contained in a given preparation.

MONITORING ORGANISATION SYSTEM

Taking the situation described above into consideration, various countries organize special programmes of investigation aimed at monitoring environmental and food contamination. This obligation in Poland is placed upon the respective Ministeries by Resolution No. 64/70 (18 May 1970) of the Council of Ministers, which directs that investigations on the toxicology of pesticides and on their residue of control in the biological environment have to be conducted. A permanent system control of the monitoring pesticide residues was elaborated in Poland in 1967. It is based on the State Veterinary Services under the Ministry of Agriculture (Veterinary Department) which has set up 17 sampling stations in the Voivodship Veterinary Centres which in turn established five county stations each. A list of all of these stations is sent to the Pharmacological and Toxicological Branch of the Veterinary Institute in Puławy. Samples of tissues from pigs, cows, chickens, as also of milk and eggs are taken for analysis in each of the 85 county stations once each year, or twice in case of need (February-March and September-October), on a precisely defined date. Before each sampling operation, the Veterinary Institute supplies detailed instructions on sampling and transportation of samples, and also questionnaire-certificates concerning origin of samples. Samples are by county stations to voivodship veterinary centres, which in turn send all samples packed in containers with dry ice to the pesticide residue laboratory in the Pharmacology and Toxicology Branch of the Veterinary Institute in Puławy. Similar laboratories are to be organized shortly also under the Veterinary Hygiene Institutes (ZHW) in Gdańsk, Katowice and Poznań.

During the regular sampling operations, samples in 1969, 1970, 1971, 1972 and 1973 were taken for pesticide residue analyses from pigs and cows, as also eggs and 1300 collective samples of milk from over 130 thousand cows. Laboratory results obtained from these investigations give an accurate picture of the level of contamination in animals and animal products with persistent pesticides. On the basis of these results, the Ministry of Agriculture is in a position to formulate pesticide supply policies for the country as a whole or for specific regions, and to inform other Ministries on this subject.

MONITORING METHODS

The three mentioned laboratories under the Veterinary Hygiene Institutes in Gdańsk, Katowice and Poznań carry out typical monitoring for chloro-organo--chlorine pesticide residues according to instructions of the Veterinary Institute in Puławy. Apart from the above, investigations on pesticide residue in animal products designated for export have been carried out over the last few years by the Veterinary Hygiene Institute in Warsaw. All results of analyses on pesticide residue carried out by the units mentioned are currently sent to the Pharmacology and Toxicology Branch of the Veterinary Institute in Puławy, which in turn supplies full information on residues in animal material to the Ministry of Agriculture and to the Institute of Plant Protection (IOR), which functions as a coordinator on scientific problems related to pesticides.

Monitoring for pesticide residue is limited to date in the first place to organochlorine insecticides. Problems connected with organó-phosphorus insecticide residue, carbamates, and phenoxyacetic herbicides have occurred only sporadically. However over the last few years, problems have rapidly begun to turn up, which require scientific solutions. Foremost amongst these problems is that of certain toxic metal residues (especially mercury, lead and cadmium), chlorinated biphenyl residue, and certain other persistent compounds used in modern industry especially those used in the production of items such as plastic and others. This situation has led to the need for the use of rapid methods of identification and quantitative analysis of these new residues. Apart from this basic system of residue monitoring, casual preliminary studies are being conducted on further new problems of environmental toxicology with which modern veterinary toxicology and hygiene of animal food products is very closely connected. It is for this reason that, apart from basic investigations on pesticide residues, the Pharmacology and Toxicology Branch of the Veterinary Institute in Puławy devotes much effort also to such problems as possible residues in so called feed additives and to investigations on natural toxic compounds occurring in feeds (VTO, aflatoxin, nitrosamines, etc.).

Although all of these problems are complicated and difficult from an analytical aspect, nevertheless, due to efficient operation of the system of residue monitoring in Poland and good cooperation between the Ministry of Agriculture and pesticide control laboratories distributed throughout the country, as also with the Ministry of Health and international organizations within the frame work of the United Nations and the Council of Mutual Economic Assistance, rapid monitoring and proper use of pesticides is possible.

Numerous tests have shown that animal products in Poland contain less pesticide residues than the limits allowable by WHO and FAO. They are therefore safe as concerns human health

SCIENCE AND TECHNOLOGY

Professor Dr. Antoni Rutkowski
of the Academy of Agriculture
in Warsaw

RESEARCH ON THE FOOD PROCESSING INDUSTRY IN POLAND

ual transformations, with their external expres- in urbanization and industrialization, have had ecisive influence on man's way of life. The ct contact existing between the urban and, lually, the rural consumer — in relation to the as a producer of foodstuffs is fast disappearing. food-processing industry in Poland today takes more than 80 per cent of all agricultural produce, per cent of the urban population's calorific food prises products which have been industrially essed to a greater or lesser degree.

necessity and the conditions to undertake ntific research on the feeding habits of the ety have been created, in Poland, by the changes ch have occurred in them. The employment of results of modern scientific research has allowed itional home cookery and that of the craftsman cializing in food processing to be used in in- try and for fresh new methods of food processing e developed.

development in Poland of the food science l its technology

was at the beginning of the 19th century that dies into the chemistry and technique of pro- sing agricultural products were first undertaken Poland. The first university lectures on this sub- were delivered in Warsaw in the mid- 19th tury. It is, thus, hardly surprising that Maria odowska-Curie (1867—1934), two times winner he Nobel Prize, started her career in chemistry he Laboratory of Industry and Agriculture in War- (1889 to 1891), that the Polish vitaminologist Kazimierz Funk (1884 to 1968), the discoverer vitamin B introduced the term of "vitamin" to ritional usage and, finally, that Dr. Stanisław , a British citizen of Polish origin, who once rked with Dr. Funk, and who is an outstanding d chemist in his own right, is a foreign member the Polish Academy of Sciences. In the period ween the wars, Polish scientists noted numerous ntific attainments to their credit, particularly the technological micro-biology, enzymology, mistry and the processing of sugar and milk. first scientific centres dealing in foodstuffs as eparate area of science, began to appear.

the 30 years since the conclusion of World r II, a notable development has occurred in the sonnel and research potential in the Polish ople's Republic. It can be said, without any gestion of exaggeration, that well developed ntres dealing in research into the science of food d its processing have appeared in Poland — aching out beyond the bounds of research proper, d into the expansion of food production tech- ques, as well as into the improvement of their ality, with the requirements of the domestic and eign markets in mind.

e following examples may serve as illustrations this:

tional methods of continuous diffusion and juice rification have been developed in the sugar cessing industry, the extraction, mud removal, turation, pH control and juice filtration technology ve been automated, while the conditions con- lling sugar cristallization have been established. is justifies the opinion gained by Polish sugar tories built at home and abroad, that they are ong the most modern plants in any industry. ry tangible economic effects have been noted, as outcome of defining the optimum beet-storage nditions and designs in the area of water economy, sugar factories. Research into in the extraction, fining and hydrogenization of rape oil, partic- arly as regards the manufacture of margarine hich had previously not been produced in Po- nd, went hand in hand with the creation of the l industry in this country and the building of the st production units.

he fruit and vegetable processing industry made e, as it arose, of research into the means of pro- ing vegetable potable juices and of fruit wines, child products, and the like. The designs of many modern items of equipment were drawn up, alongside processing techniques. The same is true of the production of natural coffee concentrates and those of coffee substitutes, vitamin C concentrates from natural raw materials and a whole range of single-meal concentrates.

In the potato starch processing industry, the enzymatic manner of producing glucose and the undertaking of the production of various starch substances used in textile manufacture and in coal mining, are other notable achievements.

Grain processing is another area in which much has been achieved, to mention research into continuous bread baking processes, the rheology of grain material and dough, into aromatic substances and bread staling processes.

Fermentation processes have made much of research both in the past and the present. This has allowed a notable rise in productivity of yeast processes to be reached by employing a dense liquor, in beer production effectiveness by using hop extracts, and by employing continuous malting and fermentation methods. Let it also be noted that the fermentation of food acids, such as citric, lactic and acetic acids, is an accomplished fact in Poland. Recent research has, further, built the foundations for the development of a fresh area of the fermentation industry — the biosynthesis of enzymes and the manufacture of enzymatic substances.

In meat processing, the works devoted to meat pickling are of considerable interest. The principles for the industrial pickling of meat have been defined, on the basis of model systems of the kinetics and dynamics of the penetration of the pickling substances into the meat. Research stands behind the excellent quality of Polish bacon and pasteurized ham. The original process of concentrating curing smoke and of obtaining protein sausage skins are of great economic significance, as is the work undertaken on the mathematization, objectivization and optimalization of industrial and economic decision taking, with the use of electronic computer methods.

The dairy industry can boast of particularly valuable research. A multitude of new processes have been evolved, including the dehydration of milk with simultaneous enriching with whey protein (partial humanization) the processing of milk to ensure an improvement in the biological value of cottage cheeses and the maturing of cheese-like substances, production processes for new cheeses. Research into dairy engineering and industrial apparatus has also been proceeding, particularly in waste cleansing, continuous cheese manufacture, fluidizational drying of casein; the use of mathematical models is practised, as the first step towards the computerization of food processing.

To sum up, the research done in Poland in the processing and refining of agricultural products has, quite definitely, laid the foundations for a modern food processing industry.

Scientific research institutes and university-level schools in Poland

Research into the science of food and its processing is pursued by academic and industrial institutes.

The work done by academic institutes into the is very considerable. In the past 30 years, four centres (departments) have been formed at university level to undertake complex research and to train specialized personnel in specific lines of technology. These are at the Łódź University of Technology and the University of Agriculture in Olsztyn, Poznań and Warsaw. Individual, selected research problems are, further, the subject of research at the Universities of Agriculture in Lublin, Kraków, Szczecin and Wrocław.

Industrial research is pursued by the Sugar, Fermentation, Dairy, Meat and Fats Institutes, located in Warsaw; by the Central Research Laboratories for Grain Processing and Storage, and for the Bakery Industry in Warsaw, for the Tobacco Industry in Kraków, for the Potato Industry, the Food Concentrates Industry and for Poultry in Poznań, for Refrigeration in Łódź, for the Fodder Industry in Lublin and for Fish Processing in Gdynia.

Work into the assessment of raw materials is pursued, apart from industrial institutes, by agricultural institutes i.e. the Institute of Animal Husbandry in Kraków, the Institute of Plant Breeding and Acclimatization in Radzików, the Institute of Market Horticulture and the Institute of Fruit Growing in Skierniewice. Research into fish processing techniques is also carried out by the Marine Fisheries Institute in Gdynia.

Research into food and nourishment hygiene is in the hands of branch institutes (i.e. Institute of Food and Nutrition in Warsaw and universities subordinated to the Ministry of Health. The problem of food contamination, of extreme importance to the health of the society as a whole is, probably, the most important of all research here. This is in the competence of the State Institute of Hygiene and of several institutes of toxicology and bromatology in Medical Universities. The institutes of animal products at Veterinary Medicine Departments of Universities of Agriculture participate in this work.

International cooperation

Over the 30 years gone by, the conditions have been created in Poland for the education of scientific personnel who have gained notable respect both at home and abroad.

The Polish Academy of Sciences was one of the first such institutions to call into being a Scientific Committee for Food Technology and Chemistry, and a Scientific Committee for Human Nourishment. Polish specialists are actively participating in a multitude of leading, specialist positions, within the Food and Agriculture Organization and the Council for Mutual Economic Assistance (CMEA) of the socialist countries.

Polish scientists participate in the work of such international scientific associations as the Commission Internationale des Industries Agricoles et Alimentaires, Institut International du Froid, Federation Internationale de Laiterie, International Union of Pure and Applied Chemistry, International Union of Food Science and Technology, Association des Chimistes et Ingénieurs de Sucrerie, Distillerie et Industries Agricoles, International Rapeseed Research Advisory Group, to mention but the more important ones. Polish experts have been repeatedly elected to the leadership of these organizations, while Poland has been the meeting place of many congresses and scientific symposia. In the initial period of national reconstruction, immediately after World War II, Poland met with notable help from foreign scientists. Many of today a university professors spent much time at the beginning of their professions in the Soviet Union, USA, British, French and other foreign laboratories. Today, the situation has changed, and students from the Far and Middle East, Africa, Latin America and from West Europe can be found in Polish laboratories under scholarships there. The scientific specializations which enjoy the greatest popularity are in sugar processing, dairy, the processing of oils and fats, meat and fish products, grain processing and human nourishment.

The above is but a fragment of the existing situation though the examples submitted are optimistic as to future cooperation in problems whose solution is imperative for the fuller satisfaction of man's food requirements.

In the conditions of today's scientific and technological revolution, new and bold steps are awaited in food production, and a concentration of means and resources should be forthcoming to build individual production methods into one rational

Fruits in Syrup


KRAKUS
Erdbeeren
POLCOOP
Erdbeeren
Stachelbeeren
Heidelbeeren
Heidelbeeren
Raspberries
Strawberries in Syrup
Heidelbeeren
Guindas en almibar
Stachelbeeren
AGROS
HORTEX
CRS

POLISH SPECIALITY

Fresh fruit and vegetables are a very important factor of proper nutrition. In certain cases, however, when it is difficult or outright impossible to obtain them, they can be replaced by processed fruit and vegetables. Preserves, prepared according to modern technologies, make possible the retaining of a substantial part of vitamins, all easily assimilable organic acids, sugars, mineral salts, flavour and aroma compounds, as well as other compounds found in fresh fruit. Fruits in syrup are one of the most popular kinds of fruit preserves. This is one of the specialities of the Polish food-preserving industry, exported for many years now to the markets of the whole world. Fruits in syrup are produced in numerous plants excellently equipped with modern machinery and equipment. Only top-quality fruit, freshly gathered and immediately processed, is used in manufacturing preserves. The speed of processing, or the short period of time passing between harvest and the putting of fruit into jars, or cans is one of the basic conditions for ensuring the high quality of products. The fruit delivered to the factory is washed there, the stems are removed, the fruit is calibrated according to size (e.g. strawberries), controlled on an inspection line with regard to quality, scalded at an appropriate temperature so that they do not lose their properties and next put in syrup, de-aerated and packed in jars or cans. The continuity of production is maintained; the conveyor belts are in constant motion until the last batch of fruit is processed.

Polish fruits in syrup are manufactured without any chemical agents, and contain only fruit and sugar. Colouring substance (except when expressly requested by an importer) and preserving agents are banned. Preservation is effected solely by thermic means. Thus the technology of production is in line with the newest world tendencies towards avoiding chemical agents in food.

The proper nutritive value measured in calories is relatively easy to achieve. The situation is different, however, as regards flavour and aroma values. The latter depend on the variety of fruit, climate, soil and many other factors, frequently of a local character. Polish agriculture is in a relatively good situation since the climate of central Europe is suited for cultivation of a number of fruits, such as strawberries, raspberries, gooseberries, currants, sweet and sour cherries, plums, apples, etc. The fruit is characterized by flavour and aroma highly valued by the importers of our fruits in syrup and of solid packed fruits.

One of the most popular fruits are strawberries (Fragaria vesca L). The main strawberry-growing regions are Central Poland (the surroundings of Warsaw, Radom and Kielce, representing 46.7 per cent of the total area under strawberry plantations) and southern Poland (the surroundings of Cracow and Tarnów). In recent years, strawberry growing has developed on a large scale in the north-eastern part of the country) (the surroundings of Białystok), and on a smaller scale strawberies are grown virtually all over Poland.

The processing industry sets high requirements to the planters. The fruits must be characterized by high yields, the stems must be easy to remove, the fruits must be dark red, they must ripen evenly, must be equal in size, characterized by a high sugar content, proper relations between sugars and acids, good flavour and aroma. Since it is practically impossible for one variety to meet all these conditions, there is the need for constant experiments aimed at obtaining new varieties and introducing in cultivation new varieties of foreign origin.

The chief variety grown in Poland is Senga Sengana (up to 80 per cent of the harvest); then there are such varieties as Purpuratka, Talisman, Red Gauntlet. A number of other varieties are being tested now, of which — according to the Institute of Horticulture — Pocahontas and Midway are the most promising ones. Strawberries in syrup are offered in several kinds of packings:

In Euroglas jars of .37 and .7 litre,

In "Twist-off" jars of .45 and .9 litres,

In cans of 1/2 and 1/1.

In conformity with the newest tendencies in fruit processing, the extract is limited to 3[illegible]

Fruits in Syrup • Fruits in Syrup • Fruits in Syrup

PRESERVES IN EUROGLAS JARS ARE THE BEST

Glass jars of the "Euroglas" type continue to be the world's best packaging for fruits in syrup and vegetable preserves, such as pickled dill cucumbers, pickled red beets, sliced cucumbers, etc. These modern jars are basically different from the traditional ones. First of all, they are easy to open. No device is needed for this purpose. "Euroglas" jars are closed with absolutely airtight lids of the "twist-off" type. Also, they differ from the traditional ones in shape and capacity.

The "Euroglas" jars produced by Polish industry are characterized by an oval horizontal cross-section, which corresponds to the requirements of our trade partners.

The typical capacities of Polish "Euroglas" jars are .37 and .72 litre, preferred by foreign customers to the traditional capacities of .45 and .9 litre. In the FRG, the new regulations concerning packagings define .37 and .72 litre jars for fruit and vegetable preserves as "favoured".

Polish industry offers a wide variety of fruits in syrup and vegetable preserves in "Euroglas" jars of these standard capacities.

FRUITS IN SYRUP

raspberries	in .37 and .72 litre jars
blackberries	in .37 and .72 litre jars
bilberries	in .37 and .72 litre jars
gooseberries	in .72 litre jars
sweet cherries	in 72 litre jars
sour cherries	„
greengages	„
strawberries (dark red varieties)	„

VEGETABLE PRESERVES

pickled dill cucumbers	in .72 litre jars
cut pickled cucumbers	„
sliced cucumbers	„
pickled red beets	in .37 litre jars

The jars are packed in corrugated cardboard cartons adapted to both land and sea transport. One carton contains 12 .72 litre jars or 24 .37 litre jars. In the future, Polish exporters plan to widen the assortment of preserves in "Euroglas" offered for export.

The chief buyers of the above-mentioned products include the FRG, West Berlin and all the EEC countries.

Polish preserves in "Euroglas" jars are exported by three foreign trade enterprises: POLCOOP, AGROS and HORTEX.

Fresh vegetables

The area currently planted with vegetables amounts to about 250,000 hectares yielding an annual crop of about 4 million tons.

Up to date, truck vegetables prevailed among those cultivated in Poland, i.e. the majority of crops consisted of such vegetables as: cabbage, beetroots, carrots, onions and cucumbers. The land used for cultivation of these types of vegetables made 65 per cent of the total acreage under vegetables.

Efforts have been taken up over the past three years to improve the choice of cultivated vegetables aiming at the extension of production of quality species. For this purpose greenhouse and hotbed cultivation is being rapidly developed and intensified.

Greenhouse and hotbed vegetable gardening is chiefly the domain of cooperative and state-owned farms. There are at present about 70,000 such farms in Poland situated mainly in central Poland, i.e. in Warsaw, Poznań and Łódź voivodships, around big urban centres.

Until recently, vegetable cultivation in Poland was concentrated in voivodships boasting long-time gardening traditions such as Warsaw, Lublin, Kielce and Łódź. Their area under vegetables made over 50 per cent of the total area earmaked for vegetable growing in Poland.

Of late, the Opole, Wrocław and Zielona Góra voivodships have become important vegetable suppliers.

HORTEX, the Foreign Trade Company of the Union of Horticultural Cooperatives, is the sole exporter of fresh vegetables and fruits from Poland. Their steadily growing exports stimulate the progress of horticulture. Over 16 years of its activity HORTEX has exported more than 2.5 million of fresh and processed fruits and vegetables. The value of products exported during this time exceeded 160 million roubles for deliveries to CMEA countries, and 170 million dollars — to other countries. To better illustrate the extent of HORTEX exports: assuming an average load of 15 tons of commodities per one car, the total tonnage of vegetables, fruits and products they delivered over the past 15 years would require about 160,000 railway cars making a train 1,600 km long.

The chief buyers of Polish vegetables are: Czechoslovakia, the GDR, the USSR, the FRG, West Berlin, Sweden, Great Britain, Finland and Belgium.

Among the regular customers buying our vegetables are such companies as: KOOSPOL — Praha; FRUCHTIMEX — Berlin; ICA and KOOPERATIVA — Sweden; MARIE THUMAS — Belgium; HAMEICO — the FRG, and KAMSTRA — Great Britain.

The relatively very low fertilizing, the high nutritive value and tastiness are the prinicipal reasons for the constantly growing demand foreign markets have for Polish vegetables. They are used for both industrial purposes and individual consumption.

HORTEX maintains steady commercial contacts with over 60 countries and keeps expanding the range of its customers organizing its own branch offices in various European countries, and with other means of promotion. The growing sales of these shops are the best proof of the high quality of vegetables grown in Poland.

Dehydrated vegetables

Poland has an old tradition in the cultivation of many varieties of vegetables. Both favourable climatic conditions and considerable achievements of Polish science as concerns selection of varieties rich in aromatic, savory and nutritional elements, as well vitamins, exerted their influence on development of this branch of cultivation. In view of the limited period of storing vegetables in a fresh state, Poland has expanded processing operations, with special emphasis on dehydration. The technology used in the production of dehydrated vegetables is based on the following principles:

- only raw material of the highest quality is used for production of dried vegetables,
- dehydration is carried out immediatly after harvesting,
- initial processing of the raw material such as peeling, cleaning, etc. is carried out by mechanical means or by hand,
- natural colour is obtained only as a result of proper thermic measures,
- the ready product is obtained only after 2 to 3 hours in apparatuses of Polish construction, at temperatures ranging from 30 to 60°C (optional regulation of drying temperature possible) depending upon the vegetable concerned,
- water content of dehydrated vegetables does not exceed 8%, thereby assuring stability and preservation, and proper qualities after reconstituting with water.

Specialization of Polish industry in vegetable dehydration has allowed for maintaining by means of physical methods of all of the initial and characteristic properties of fresh vegetables. These properties colour and flavour in the first place, do not undergo negative changes during storage. It should also be emphasized that no chemical treatments are applied in the production of dehydrated vegetables, which also have high trade qualities.

The various vegetable varieties can be supplied in various form:

- onions — in dices, slices, flakes, kibbled, meal,
- carrots — in dices, slices, flakes, kibbled,
- potatoes — in slices, cubes, strips, flakes, kibbled, flour,
- red beets — in slices, cubes, strips, kibbled,
- parsley root — in cubes, slices, strips, kibbled,
- celery-root — in slices, cubes, flakes, kibbled, flour,
- garlic — in whole cloves, mother bulbs, cut, kibbled, meal,
- red cabbage and savoy cabbage — cut,
- leek — white, green, white-green flakes,
- parsley with and without leaves celery and dill leaves — as dried leaves without hard parts, partially lignified main leaf veins.

Dehydrated vegetables can be supplied in cardboard boxes with polyethylene lining, in plywood drums with polyethylene lining, in hermetically closed tins, in paper bags, or as requested by the buyer. At the special request of the buyer dehydrated vegetables can be supplied in hermetically sealed drums in which air is substituted by a neutral gas (nitrogen or carbon dioxide). Due to the high grade of the raw material, improved methods of dehydration and of storage, Polish dehydrated vege-

WORRYING ABOUT
PESTICIDES?
NOT ON VEGETABLES
FROM POLAND!

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S
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HORTEX

AN ARTICLE
KNOWN ON THE MARKETS
BY ITS OUTSTANDING
QUALITY

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Dairy produce exports will develop

Statement by the Chairman of the Main Board of the Central Union of Dairy Cooperatives, Józef Jańczak.

FAO forecasts indicate that the world production of dairy goods will amount to some 447 million tons in 1975, while the world requirement is set at 466 million tons. The gap will thus be in the region of 19 million tons. These data are calculated in terms of milk.

Evidently, the relation between supply and demand will vary from region to region and will be different for various dairy product groups. One thing seems certain, however: that the demand for high-quality and long-stability protein products, such as powdered skimmed milk, condensed milk and cheeses, is bound to rise, and that the increase in production of such dairy goods is not going to cover, in full, the rise in demand in several countries. This is particularly true of the developing countries, where the demand is outpacing the supply from local sources, which leads — in turn — to increased imports.

Again according to FAO forecasts, the notable disproportion between various countries as regards the quantity of consumed milk and its products should even out within the next decade.

Poland is an obvious source of dairy products for other countries, largely due to the international position it enjoys in terms of overall milk production and of domestic consumption. In overall figures, Poland is the world's fifth largest milk producer, with the 430 litres per capita consumption reaching a comparatively favourable position among other countries of developed dairy industries. Poland is interested in expanding dairy product she has long-standing traditions. Polish butter was first exported in 1927, followed later by other products. After World War II these exports expanded notably, reaching definitely tangible values on world markets, the value being the equivalent of nearly 37 million US dollars in 1973. This corresponds to 8 per cent of the total, national production of milk. The corresponding figures expected in 1974 are 45 million US dollars and 10 per cent.

A most significant increase in milk production and purchases can be safely forecast, taking into account Poland's overall dynamic economic development, including agriculture. The numerical increase of cattle herds, improvements in milk productivity and milk quality are ensured by the highly skilled personnel whose duty is to recommend improvements in the types and amounts of fodder available, the rational feeding of cows, cattle selection with an eye to further improvement of its usable value, the organization of constant veterinary care and of complex cattle husbandry, as well as in other areas.

The expansion in milk production and purchases expected up to 1980 will permit domestic consumption of dairy articles to increase still further and will also allow Poland's place in the world exports of such products to stabilize.

One factor which will bear favourably on these plans is the intensive expansion and modernization of the milk processing industry. This process, commenced 3 years ago, is based on the most modern of contemporary technical achievements in dairy industrial processing.

Investment outlays in the current 5-year period will be three times those while in the forthcoming 5 years, from 1976 to 1980, a further doubling will ensue as related to the 1971/75 period. A constant improvement in final product quality will, thus, ensue and to this end the process of continuous improvement of skills throughout the dairy industry is subordinated. An expression and form of these intentions is the exchange of experiences with leading dairy producers in Europe, including apprenticeships, and the participation of Polish dairy experts in F.A.O. and similar international bodies. All this will give a notable increase in the exports of Polish dairy products in the nearest future, and a resulting increase in Poland's share in satisfying world requirements for dairy products, from the point of view of quantity, assortment and quality.

Apart from the maintaining of the traditional exports of Polish butter and casein, very notable stress will be placed by the dairy cooperatives on expanding cheese sales and those of powdered milk, primarily skim milk. Bearing in mind production potential and geography, exports here could be multiplied in a relatively short time. Once domestic requirements for consumption casein and caseinates, and for condensed milk, have been satisfied, the export of these products will be undertaken, and that within the next few years. A factor of no mean significance which should stimulate our intentions and guarantee satisfaction among importers of Polish dairy products — is their excellent quality from the micro-biological and physico-chemical points of view; this will be enhanced by the strict requirements set by quality inspection services and by the ability of Polish exporters to adapt packings to the

dairy products

MANY A FUNCTION OF THE EXPORT STORAGE FOR POLISH DAIRY PRODUCE

The eight-storey building housing the Export Storage for Polish Dairy Produce is situated a few dozen meters off the wharf of Gdynia port. A wide, roof-covered gallery connects the second floor with a long balcony-shaped platform which runs along the wharf. Port cranes take crates and cartons filled with butter and cheese and bags containing powdered milk from the platform and load them directly on the ships.

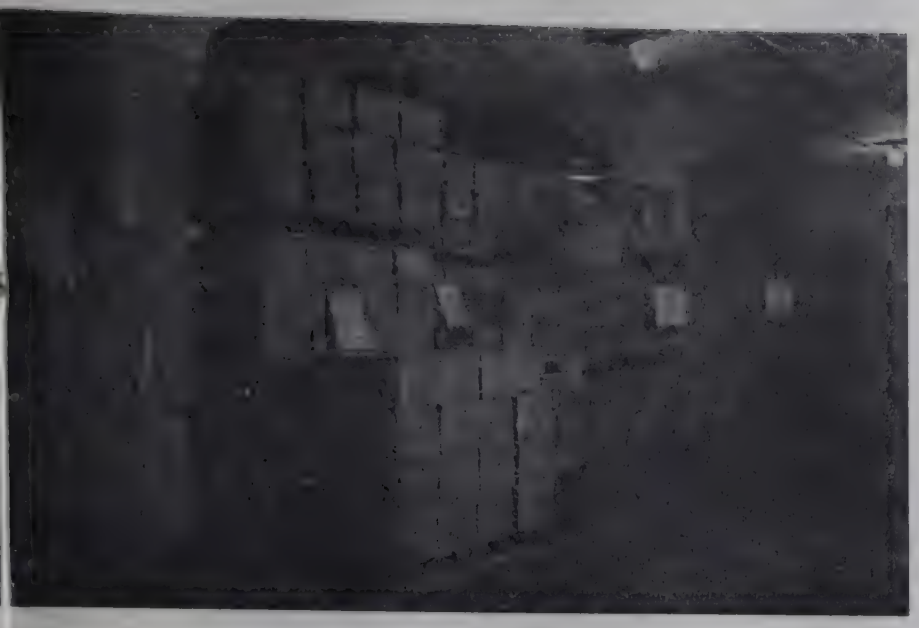
Excellent, specially packed ice-cream is road-transported to foreign customers in refrigerator trucks.

The situation of the storage allows for complementing export commodity lots not only for transport by sea, but also by land and air. Almost 95% of the export plans are implemented by the storage on behalf of the Foreign Trade Enterprise ANIMEX, about 4.5% on behalf of TORIMEX and about 1% is implemented for the Foreign Trade Enterprise BALTONA, Shipchandlers.

These three foreign trade enterprises are serviced by a team of specialists of the storage under the directorship of Dr Stanisław Czerwiński. His assistant for production is Eng. Franciszek Loose. We take advantage of his guidance in our roam through the storage, beginning with the ground floor where through an open iron gate a refrigerator car is let in, loaded up to the brim with cartons containing cubes of fresh, appetizing butter. At the same time butter is being unloaded from refrigerator trucks along a roofed platform at the other side of the building. Close-by, trucks with cheese await to be transshipped on a vessel moored at the wharf. Polish export butter, says director Loose, is eagerly sought after on markets abroad due to its fresh aromatic flavour reminding of nuts. It complies with world standards by its organoleptic, physicochemical and microbiological properties: this is proved by the number of quality marks of the "1" and "Q" class awarded to the makers of this butter which is of high and the highest world quality standard. The single product is supplied in a very wide range of forms and packing material

The Export Dairy Storage building contains a number of storage chambers in which goods destined for expor are kept at a temperature from minus 25 to plus 4°C.

The completion of goods takes from several days to one month, depending on the date of delivery.



In the individual storage chambers, goods going to various export directions are completed.

Special carts carry boxes, crates and sacks to the reloading stands along a wide roofed gallery.

refrigerated storeys of our Export Storage for Polish Dairy Produce, and the various lots of butter designed for the given customers are collected and completed there.

The cold store of the Export Storage for Polish Dairy Produce has a number of storage chambers (including deep--freezing equipment) with a total area of 10,000 sq. m. and various temperature ranges, from minus 25°C to plus 4°C, and is equipped with Danfoss automatic control installations.

The complementing of supplies lasts from several days to one month, depending on the cruise schedule of ships, commissioning of refrigerating trucks, containers and refrigerator cars.

Marking and packing of commodities for export which are sent from some 100 inland dairies, with which the Export Storage cooperates, is carried out in accordance with the requests of consignees. The international valid standards are very high and refer not only to colour, cooling of butter, packing and marking, but also to precise microbiological testing of products designated for export. For this purpose the Export Storage has a well equipped laboratory which carries out all special tests of importance for the importer. The results of laboratory tests carried out by the Export Storage for Polish Dairy Produce are then taken advantage of in production in the various establishments cooperating with the Storage.

Polish dairy produce made for export are subjected to official standardization control. This task is accomplished by a State institution, the Quality Inspection Office (CIS) subordinated to the Ministry of Foreign Trade and Shipping. A local branch of this CIS and its laboratory function in Gdynia.

We viewed several quality certificates released by this office, among others, for Tilsit cheese designated for Philadelphia (United States) and for butter exported to North African countries, Great Britain, Austria and Switzerland.

The contents of these documents indicate that very high requirements were complied with.

From amongst the many production establishments in Poland under the Central Union of Dairy Cooperatives, the Export Storage for Polish Dairy Produce cooperates chiefly with those which specialize in their output have been, or shortly will be authorized to produce for export. Such authorizations are granted by a special commission which takes into consideration the quality of the commodities produced by the given establishment, its technological equipment, personnel qualifications, etc.

The importance of the activity of the Export Storage for Polish Dairy Produce for the efficient development of exports of dairy products is underscored by the fact that, after each of the dairy establishments has complied with the required conditions, the Director of the Export Storage for Polish Dairy Produce in Gdynia grants them the right to export these dairy products, according to the decision of the Main Board of the Central Union of Dairy Cooperatives.

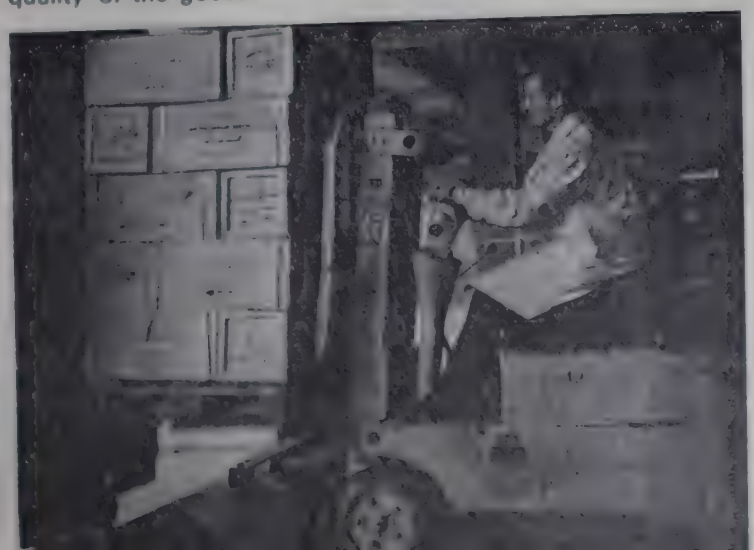
In accordance with a special dairy export programme adopted by the Central Union of Dairy Cooperatives, the Export Storage for Polish Dairy Produce has been charged with implementing the policy principles laid down by the central authorities for dairy produce exports.

Our informer, Halina Obecny, designated by the Management of the Export Storage to accompany us during our visit, tells us with pride: "During the past year we have expanded our export markets to include 28 countries and have thus surpassed our initially planned exports twofold; foreign guests, after becoming acquainted with our activities, have expressed their high appreciation".

Truly, the dynamic operations and results achieved by the Export Storage for Polish Dairy Produce can inspire full confidence in this undertaking.

J. Trzcianka

The container trucks equipped with refrigerators securing a high quality of the goods.



The means of transportation depends on the kind of commodity and the customer's requests. Goods are carried by ship,trucks and refrigerated railway cars.

Polish Vodka

The present structure of Poland's spirits industry, the scope of production, quality and range of the products are the outcome of long-standing tradition and a steady modernisation of organisational forms and production technologies. These factors have allowed to set up an efficient organisation known as POLMOS — the enterprise of spirits industry. The products of the industry and particularly vodkas feature a top quality widely appreciated the world over

The traditions of Poland's spirits industry date back to a very distant past but the first written quotations on this subject appeared in books published in the Polish language in 1595 and 1614. Climatic and soil conditions of Poland are particularly favourable for rye and potato growing. These are the prevailing crops in the structure of the country's agricultural output. Thus, the knowledge of processing sugar into alcohol known to mankind in the early stage of development had been adapted in this country to processing rye and potatoes to obtain alcohol. This fact has influenced the characteristic habits of drinking alcoholic beverages among Poles (connected to a certain extent with the country's climate) as well as development of particular production technologies. Vodka was also known under the name of "booze" in the old days and its varieties made of rye were given the name of rye vodkas. The finest of them kept for many years in oak barrels used for white Hungarian wine was known under the name of "Starka"; the names ware preserved to this day being characteristic for Polish vodkas.

Poland's spirits industry had various organisational forms in the course of time. In the inter-war period (1918—1939) it was known under the name of Polish State Monopoly of the Spirits Industry. After World War II it was reactivated to become later on an industry line linked with the Ministry of Food Industry. In its present organisational structure POLMOS — the enterprise of spirits industry — consists of numerous factories, having their management in Warsaw. POLMOS is the only manufacturer of pure and other dry and sweet vodkas in Poland. Along with the country's dynamic development the spirits industry has been also expanded in the past thirty years; there has been a marked advance in the quality of products. An incentive to raise the quality of products was the introduction in 1962 of a quality mark "1" for the highest quality goods in the domestic market and the "Q" mark for world standard products.

While in 1966 there were 15 products of the spirits industry bearing the "Q" quality mark and 11 with "1" mark, in 1973— 31 products had the "Q" mark and 118 — the "1" mark. The assortment of products has also been expanded. Thus, for instance, two new kinds of pure vodka and ten new dry and sweet vodkas have been produced in 1973. At present the offer of the spirits industry embraces one hundred different kinds of vodkas.

A proof of the appreciation of quality of Polish spirits industry products was the fact that at a great many international exhibitions, fairs, and other events these products have won: 23 gold medals
22 silver medals
7 awards

Noteworthy among the successes was the "award of the year" granted to Wódka Wyborowa (45°) in 1970 by the Institute For Promotion and Prestige in Geneva and the "Gold Hercules" award (often described as the commercial "Oscar") granted by the Italian Institute for Economic Development (CIRE)

The high quality of Polish vodkas confirmed by the international awards made them much sought after on world markets. The export of spirits industry products started soon after World War II has been growing steadily. At present Polish vodkas are exported to 76 countries in all continents. The successes just mentioned were not easy to come. It was along with the reconstruction of factories after the war devastations that new, updated technologies and machinery had to be introduced. Poland's experts improved the production processes by means of their own inventions, closely cooperating with scientific research institutes, to launch technological advance. As a result, the past few years have brought about fundamental changes in technologies applied by the Polish spirits industry. The major part of our factories represents a high European standard. Most of the operations are mechanized and automated to mention but:

- the mechanized and partially automated bottling process,
- the use of pilferproof caps for bottles,
- the method of circulation cycle in the production of infusions— i.e. the application of semi-products in the production of various kinds of dry and sweet vodkas,
- maderisation and freezing method for maintaining the quality of liquids,
- introduction of standardized, updated rectification and control- and- measuring equipment in the rectification process of pure alcohol,
- automation of alcohol rectification processes.

Both the achievements of the spirits industry up to now as well as plans for the future are implemented in close cooperation with scientific -research centres. Thus, for instance the services of the Fermentation Industry Institute are widely used, since the Institute employs an experienced staff of specialists in the field of production technologies of alcohol and vodkas. The research work conducted at the Institute on special request of the spirits industry usually leads to introducing the results into the production processes. The Spirits Industry also cooperates with such academic schools as the Technical University in Łódź, the Academy of Agriculture in Warsaw and the Higher School of Economics in Wroclaw. It is at these schools that our staff is trained and here as well research work is conducted for the needs of this industry line concerning its further development. In the laboratories of these schools research work is conducted on the control of raw materials and products of the Polish Spirits Industry.

Having in mind the updated organisation and technologies of the Polish Spirits Industry we do not forget the many centuries old traditions of this industry line. We have been developing the production of vodkas based on genuine old recipes, carefully selecting top quality raw materials. The time of cellar treatment (seasoning) and maturing of our brand products is strictly observed along with all the quality requirements. This applies to all our products. Many of the retired members of our staff continue to share their experience with their successors.

Thanks to the preservation of tradition and the updated technologies, harmoniously blended, the quality of Polish alcoholic beverages has been maintained on a top level. We cannot fail the confidence of our buyers from 76 countries of all the continents.

Tadeusz Mogielnicki

Polish Vodka

straight

on the rocks

in cocktails

in long drinks

You can't go wrong!

EXPORTER

AGROS

information

Fertilizing woods with sewage

A project was established for making the most rational use of the increased amounts of sewage delivered by the extended and modernized potato processing factory in Iława, Olsztyn Province, following its tripled production. Fourteen cubic metres of water are required to process one ton of potato raw material, which itself contains 80% of water. An experimental station was organized at the factory by the Institute of Forestry, to study how such liquid waste affects the growth of individual species of trees. When this research is completed, the sewage will be led to a wooded region of 380 acres, over a pipeline, where it will be distributed through a system of sprinklers.

Two hundred thousand US dollars for horses from Polan

The Polish exporting company ANIMEX sold, for ov $ 200,000, horses to foreign buyers in March 1974, auctions held at Ptaszkowo, Poznań Province, ar at Łobez, Szczecin Province. Forty importers fro Italy, Federal Republic of Germany, The Netherland Belgium, Sweden and Denmark were present at the auctions at which 300 horses were put up for sa and 227 of them were sold. The highest price 3100 dollars was paid by a Belgian buyer for a hor from the State Stud Farm at Sieraków.

ANIMEX negotiated the sale of 9500 horses from P land in 1973, for a total price of 23 million dolla The Bushman, a full-blood Arab, was sold to the US for a record price of 60,000 dollars.

The mysterious crab

The Baltic and North Sea coasts were the scene of an invasion by the huge *Eriocheir sinensis* crab in the thirties. This crab, a native of China, is edible, about the size of a man's hand. It began to multiply rapidly and as time went on it began to move inland. It It was found in Polish lakes and rivers, digging its channels in the hard banks. The fears expressed by fish specialists that this rapidly multiplying crab would violate the biological equilibrium, proved unfounded, and the crab settled down in Europe without causing any harm.

The amount of this crab caught by Polish fishermen in the thirties went into dozens of tons annually, but for some unknown reason the crabs vanished and are only very rarely found. The Szczecin Academy of Agriculture is trying to find out just why this happened. Some of the crabs found today are very old and ideally adapted to the environment, which excludes any explanation based on environmental changes or man's intervention. It may very well be that the crab population process has been slowed down by the necessity of acclimatization.

A NEW METHOD OF FISH BREEDING

A new method of fish breeding has been developed at the Poznań Academy of Agriculture. The idea is to use special cubic receptacles of 12.5 cubic metres, covered with a nylon mesh and suspended on special floats. Granulated fish fodder is delivered by semi-automatic feeding units. The advantage of this method is that parasites have no access to the fish, since the receptacles are periodically lifted from the lake bottom and are rinsed with fresh water. The State Fishery Farm in Poznań Province was the first to employ these receptacles in ponds and lakes. The method has been notably successful: the weight gain by the fish after 40 days of such feeding was several times in excess of that under natural pond or lake conditions.

ATTENTION ALL WILD GAME HUNTERS!

The hunting grounds of Rzeszów Province enjoy an excellent reputation among foreign hunters of wild game.

Thirty-three hunting circles from that region have earmarked 57 harts, 127 stags and 20 wild boars for shooting by foreign hunters in the 1974/1975 season, notably more than in the preceeding season.

Improved feeds

Work on improving cattle fodder is proceeding in the Zielona Góra Association of State Farms in cooperation withe the Poznań and Szczecin Academies of Agriculture. The composition of and production process for many fodder blends for young cattle and hogs have been drawn up and introduced to industrial practice. The "Mlekowit P-2" — a dry feed concentrate for pigs is such a mixture. It reduces the natural growing time for piglets from 8 to 3 weeks. An industrial method of enriching fodder with protein components has also been developed. Dried grain straw, sugar beet waste, potatoes and vegetables with added ammonia water can be used to manufacture a valuable feed granulated for meat and milk cows. The ammonia water increases the assimilability of the protein and raises the straw's nutritive value from 30 to 60 p.c.

Work on concentrated mineral urea is also far advanced; when mixed with fodder it allows one kilogram of fodder [illegible]

Looking for more fruit and vegetables

A programme for the accelerated development of orchard and market gard production in Central Pomerania, between 1974 and 1990 has been drav up by the Szczecin Agricultural Academy and the Fruit Growing Institute Dworek, Koszalin Province. Under this programme, which is already being i plemented, by 1975 the area under orchards will expand to 4 thousand he tares, to yield 20 thousand tons of fruit. By 1980, the area of fruit farms Koszalin Province will amount to 7 thousand hectares. Difficulties are expect in rolling country, though notable expansion is also assumed.

Truck gardening is also to develop at a speedier rate, with vegetable producti to rise from the present 56 thousand tons to 200 thousand in 1990. Mode greenhouses are to be built, including three large vegetable growing co plexes — the first in Karniszewice, near Koszalin.

METEOROLOGISTS HELP FISHERMEN

Weather experts from the Szczecin Agriculture Academy, Department of Maritime Fishery, are currently carrying out research on the fishing grounds off the African shelf where Polish deep-sea fishing fleets have recently been operating. This research is aimed at defining the frequency with which weather conditions, harmful to man's health, appear in various months in this climatic zone in which conditions vary widely. As an example — the days have been defined on which fog appears which makes manoeuvering difficult, and which can affect the health of the crew due to air pollution. The fine desert sand carried by the harmatan wind which forms this fog, can

New potatoe varieties

he Potato Institute in Bonin, near Koszalin had developed an ex-ellent potato variety which it called "Prosna".
he variety has a very high starch content. "Nysa", "Noteć" and Osa" are also developed at Bonin and noteworthy. More new arieties are currently under review. 5 of them have been sent for ield testing. Polish farmers obtained many types of edible potatoes om the Bonin Institute, since when it was founded 14 years ago. he most successful of them are the "Krakus" and "Narcyz" va-eties which are dug as early as the second half of June. Of later otatoes, the "Sokół" and "Sowa" are high yielding varieties which ave got very popular.

Herbs are best

definite interest in phytotherapy has become evident over the cent past, on a world-wide scale.
he Poznań Institute of Herbal Processing has been working on erbal medicines for the past 25 years. The preparations have found market in many West European countries.
he medicines themselves are produced by HERBAPOL Works.
he most successful herbal medicines produced so far are "Scopo-in", a pain-killing and diastolic compound. "Bellargal", "Alliofil" nd "Rosavit". The Current project of the Poznań Institute are cho-logue compounds and natural plant compounds with germi-nd fungicidal properties.

Trilling exports

Fifteen thousand canaries are despatched yearly by POLCOOP to buyers in Britain, Belgium, Holland and Italy. More than one third of all these singing canaries are supplied by breeders in Upper Silesia. It is worth noting that male specimens find the readiest market.

WHEY

Whey is one of the most dangerous of wastes polluting surface waters, with the lactic acid it contains. This acid, and its protein components might destroy all biological life in water.
However Polish specialists ascertained that whey is a valuable element bread production, a quantity of whey added to the bread ferment improves baking properties and bread leavening. Bread with whey added has more advantages. It contains notable quantities of mineral salts and is dietetically beneficial. It also contains much protein and fat.
We might hope whey polution in rivers will be substantially reduced as dairy factories cooperate with bakeries.

olish roses n Sweden

Every tenth rose in Swedish flowershops comes from Poland. It was in 1968 that the first Polish roses arrived there and never stopped being successful since. Around half a milion roses were supplied by the Seed and Nursery Association to Sweden in 1974. In six years rose exports to Sweden have increased ten-fold.

LOLLIPOPS FOR CATTLE AND PIGS

The production of special "lollipops" for cattle and pigs has been started by Poland's salt processing industry. These are salt-licks, containing the micro-elements of magnesium, manganese, iodine and cobalt which the animal's organism requires for proper development.
The production of these salt-licks is of fundamental importance for industrial fattening methods, for increasing dairy production and for the progress in sheep production.
The Kraków Zootechnical Institute was responsible for defining the chemical composition of the licks and their production methods, while production itself was undertaken by the salt producing and processing complex in Kłodawa, Poznań Province.

Flying cattle sheds

Young bulls from Poland are shipped to buyers in Italy between February and September every year. They are carried on Ilyushin 18 planes, 200 of them at a time. The aircrafts were remodelled, the whole interior divided into pens to carry the animals.
Some 300 bullock-carrying flights to Italy are planned this year.

BLOODLESS HUNTING

The best use has been made, in the clement winter Poland has enjoyed this year, to capture live hares for export. Hunting circles in Poland have been delivering some 120 thousand hares to hunting regions in France and Holland.
The "Jedność Łowiecka" Cooperative and "Las" company are the intermediaries in this trade, in which the sole exporter from Poland is ANIMEX, foreign trade enterprise.
Considerable numbers of deer, hart and roe, as well as pheasants are also exported to France.

International Conference of Rye Growers

An international conference of winter rye growers was held under the auspices of the world organization of EUCARPIA in Poznań on June 18—21, 1974, attended by representatives of the Netherlands, France, the FRG, Sweden, Austria, the USSR, the GDR, Czechoslovakia, Romania and Poland.
The conference was organized by the Institute of Plant Cultivation and Acclimatization in Radzików and the Plant Cultivation and Seed Production Union in Warsaw. The problems discussed at the conference included:
— in-cultivation and hetero-cultivation
— genetic sources
— resistance cultivation (powdery mildew, Fusarium wilt)
— quality cultivation (low alpha amylasis activity, low content of resorcinols, high content and quality of protein)
After the conference the participants visited several cultivation centres to become acquainted with the achievements of Polish rye growers.
More detailed information on rye growing in Poland will be found in the forthcoming issues of FOOD FROM POLAND.

POLAND INVITES YOU

Funicular to the Park Hill summit

Krynica has its special, magnetic charm. It attracts thousands of tourists and visitors every year. They cherish pleasant memories of their stay and have a feeling of well-being for a long time and... they come back again to fortify their health and have a good time.

Krynica is a charming place at all seasons: in the spring, summer, autumn and winter. It is Poland's most important health and holiday resort. Thanks to the beautiful nature, mild climate and exceptional therapeutic properties of the Krynica springs (the famous Zuber spring), it has won the reputation of gem of Polish spas. Krynica mineral waters have been known for several centuries, and their healing properties have added to the spa's fame. The mild mountain weather and excellent insolation create [illegible] conditions for treatment of [illegible] disturbances, diseases of endocrine glands, neuroses, and many more. Thanks to the mineral springs, many kinds of treatment can be carried out at the spa: mineral and mud baths, deep intestines lavage, etc.

Krynica has also specialist post-hospitalization rehabilitation centres for patients with alimentary canal and urinary tract ailments, diabetes and gynecological diseases.

Krynica, situated on the verge of the mountain range called "Beskid Sądecki", on the picturesque Kryniczanka stream, is surrounded by hills covered with woods. The local park is an attraction of the spa, with the Park Hill good for sunbathing and walks. In winter, sportsmen can avail themselves of the excellent skiing terrains, or coast down on

Part view of the modern pump-room.

Part view of the spa park

The gem of Polish health resorts

The "Patria" sanatorium, well-known for years

pools. Those under treatment can take long, non--exhausting walks in the spa's picturesque neighbourhood, and the tourists can hike along the interesting, marked tourist routes.

You will find gorgeous nature sanctuaries in the vicinity of Krynica. In the preserves there are remnants of Carpathian virgin forests and primaeval larch and lime-tree woods.

There are plenty interesting relics dating back to the 16th, 17th and 18th C. near Krynica. The primitive self-made Polish painter Nikifor lived and worked in Krynica. His stunning paintings and drawings are the pride of many a museum throughout the world.

At a small distance from Krynica are the equally known and beautiful Szczawnica Resort and the Dunajec canyon. A summer trip on highlanders'

Both in winter and in summer it is worthwhile to make a trip to Zakopane — the capital of the Tatra Mountains.

Amateurs of entertainment can go to the movies, theatre or a concert, or have a good time at restaurants renowned for their excellent cooking.

Every day you spend in Krynica can be pleasant and with good effect for your health.

What Krynica offers to tourists and visitors are not only a good climate and picturesque landscape, but also full comfort of a spa of the highest European standard.

J. Domańska

The "Nowy Dom Zdrojowy" sanatorium

Polish initiatives

Poland lively participates in numerous international proceedings for the protection of the natural environment. Poland's contribution to the international action in this domain is, among other things, a book titled "The Protection of Man's Natural Environment", the work of 29 authors, constituting a summary of all that Polish science has achieved in this domain, as Polish scientists are very active in this field. Polish representatives take part in all international meetings devoted to the problem.

Most recently at Nairobi, the key problems discussed were the protection of sea and ocean resources, the principles for energy use and the best ways to preserve the genetic resources still existing in our environment. It was decided to create an international fund for the protection of the natural environment. Poland declared a substantial sum of money to that effect. Poland is currently implementing FAO's most ambitious plan in Europe, of quite exceptional significance, on deep-sea fishery research. Ninety per cent of the costs of this undertaking will be covered by Poland, its aim being to draw up a project the most effective and proper exploitation and protection of fish resources in the oceans, including the tropical regions of the central Atlantic.

Environmental protection cannot stop at the coast. A multitude of raw materials and other products is introduced by man into the seas and oceans, upsetting the state of the environment normal for acqueous flora and fauna. A multitude of complex tasks arise as a result of this permanent polluting process; as many chemical and physical factors have to be discovered and submitted to special treatment, as they exert a considerable impact on the shaping of life in human concentrations. Here Poland is becoming increasingly active. We possess an excellent fishing fleet and an experienced technical and research personnel. The Patagonian shelf off the Argentinian coast has been the subject of research; Poland is participating in many FAO projects, in fishery conventions which grant privileges but also assume certain duties. Such conventions protect local fishing resources and provide for their proper exploitation.

For efficienting implementation the world programme of cultivating the seas and maintaining a biological balance requires joint decisions, particularly on legal matters. Should territorial waters be extended to 200 miles instead of the present 12 miles, by a decision of the great majority, then the necessity will arise of maintaining biological equilibrium over huge regions of water areas. An exemplary solution in this respect is the joint protection and exploitation of the Baltic, in the form of the Gdańsk Convention concluded by all the Baltic states and concerning fishing and all that sea's living resources. This convention started on Polish initiative and was signed after a conference of fishing experts from the Baltic states held in Sopot at which the draft of the convention was discussed.

Earlier, the Polish draft had been submitted to the Baltic states' governm[illegible] consultations was

The convention assumes far-reaching cooperation among the interested parties in maintaining and expanding research and a very widest exchange of information.

Specialists and government representatives from Denmark, Finland, the German Democratic Republic and Federal Republic of Germany, Poland, Sweden and the Soviet Union met in Sopot to review problems of legal, scientific, technological and organizational character relating to the convention, subsequently signed in September 1973. A new stage in Baltic cooperation started in Gdańsk, and it was there that the saying was coined that the Baltic has become a "political laboratory of peaceful coexistence". International press comments emphasized the enormous significance of the Gdańsk agreement, whose principal aim is to save the Baltic from a "biological death".

The 1974 Helsinki Convention relates to the protection of the marine environment supplemented other agreements enabling cooperation over a region inhabited by 140 million people. This Helsinki agreement was drafted by a committee headed by Jerzy Wonan, the Polish delegate. This document stresses the social, economic and cultural value of the Baltic marine environment and the significance of its living resources for the nations inhabiting its coast, and also the responsibility of these nations for the protection of the resources and the improvement of their value. The necessity of international cooperation was also stated, with the foundations for such cooperation having been created by the Gdańsk convention on fisheries and the protection of the Baltic living resources.

That was how, Poland's concept of making the Baltic an example of peaceful cooperation to be followed was successfully implemented. States of differing political, military and economic affiliations can be found among the seven signing parties. The agreement they reached is a notable confirmation that concrete cooperation in various areas between European states, quite apart from deeper, fundamental differences which may divide them is practically possible.

The protection of Nature's living resources is one such area, in which international, joint activities possess particularly wide prospects. In undertaking such cooperation the seven Baltic states have created an example of how targets of mutual interest can be approached, in the interest of mankind, and of immense importance for mankind's further existence.

B. Bolechowska

Quality inspection of fish and fish products

Quality inspection of fish, as well as of semi-products and finished products obtained from this raw material is becoming more and more important as world catches increase. The share of the Polish sea-fishing fleet in these catches is considerable, and for the first time in our history exceeded 500,000 tons of fish caught in 1973. Polish rivers, lakes and sea lagoons also have a share in supplying the processing industry. The supplies include such valuable fish as salmon (Salmo Salar), bulltrout (Salmo Trutta), eel (Anguilla Vulgaris), vimba bream (Vimba Vimba), which are of considerable industrial importance as raw material for the production of very valuable preserves, as also for smoking. Sales include also fresh and frozen fish. From among the many fish species caught by the Polish sea fishing vessels, the most important from an industrial processing point of view are the following: herring (Clupea Harengus), coal--fish (Gadus Virens), cod (Gadus Morrhua), haddock (Gadus Aeglefinus), sprat (Clupea Spratus), hake (Merluccius Merluccius) and mackerel (Scomber Scombrus).

The growth of catches and consumption observed throughout the whole world, as also the increasing variability of application of fish as a raw material, has resulted in expanding the range of operations of POLCARGO from year to year. The twenty-five year history of POLCARGO as a specialized superintending company also covers quality inspection of thousands of tons of various frozen and salted fish, as well as fish preserves, exported from Poland.

Quality inspection of fish preserves differs somewhat from methods commonly applied for testing other food products.

Fish have very delicate meat, and taken from their low temperature environment to a higher temperature one they deteriorate much more rapidly than the meat of warm blooded animals. Proper sampling, usually the first step in quality inspection, is of decisive significance for obtaining correct results in organoleptic inspection, and in physico-chemical and microbiological analyses. Sampling of salted and frozen fish, and of fish preserves is carried out in accordance with conditions stipulated in the contract, and based on international or Polish standards, or in accordance with specific requests of the client.

Before quality inspection and sampling as such are started, investigations should be carried out on packaging: boxes, cartons or barrels, as also on stowing of these in the transporting means, and temperature taken therein and compared with the temperature of the product. This is important, especially in the case of frozen fish transportation.

Sensory tests constitute a fundamental moment in the inspection of the quality of fish as well as of fish products. In checking the quality of food products nothing can substitute the impression made on human senses.

It is for this reason that the theoretical knowledge and experience of experts play such an important role in these investigations.

While inspecting frozen and salted fish, the following checks are made: length of fish, damages, musculature, dressing, condition of the eye, gills, skin, abdominal cavity with entrails and peritoneum, meat consistency, its colour, linkage of meat with skeleton, mellowness, and finally taste and smell. The opinion issued by specialists qualifies the degree of advancement of protein autollytic processes and of fat rancidity. In the inspection of frozen fish, investigations are also carried out for the presence of icing and consequent parching. The results of these tests are responsible for the accordance or non-accordance with the contract provisions, or with the standard in force.

While inspecting preserves, additional sensory tests are carried out apart from the above, consisting of quality inspection of tins and thermostatic tests. Investigations are also carried out to check the number of fish or their pieces per tin, their arrangement therein, thermic treatment and tenderness of fish bones. Physical testing also includes air tightness of tins, proper closure, determining of net weight, relation of meat to pickle, dry matter content in tomato sauces (refractometric).

The percentage content of fat in fish meat tissue constitutes one of the essential elements in quality inspection of frozen and salted fish. Fat content fluctuates depending upon the season of spawning and the degree of biological development, maintaining an annual, cyclical character. The herring, for example contains several to twenty odd per cent of fat, a fact which without doubt influences its industrial usefulness and taste value.

In case of salted fish, salt content is to be determined.

In fish preserves, apart from salt content, also acidity and percentage content of heavy metals and arsenic are determined. Physico-chemical tests are carried out in the central POLCARGO laboratory equipped with the most up-to-date measuring and control apparatus.

Additional bacteriological tests of frozen and salted fish are carried out if such conditions are provided for in the contract, or if sanitary regulations so require, as also of sterilized preserves with longer periods of suitability for consumption. Bacterioscopic tests and determination of aerobic and anaerobic bacterial growth are the most frequently made bacteriological tests. These tests are preceded by thermostatic testing. Quality inspection as a whole also includes determination of the percentage and type of possible parasites encountered in the meat of fish (salted in particular), which under certain conditions can endanger human health. Anisacis marina is the most frequently encountered parasite infecting the herring.

POLCARGO has branches in the sea ports (Gdynia, Gdańsk, Szczecin, Kołobrzeg), at land border crossing points, as well as in many towns and industrial centres in Poland. Full inspection can thus be carried out, subject to requirements and need, not only immediately before loading, but also at producers.

POLCARGO carries out analyses in Poland both on behalf of Polish foreign trade enterprises and foreign clients.

POLCARGO can also carry out quality inspection of fish and fish products outside of Poland by delegating its own specialists, and also undertakes inspections through its network of foreign correspondents. POLCARGO specialists, persons possessing extensive theoretical knowledge and practical experience in fisheries, participate in the elaboration and bringing up-to-date of standards and norms in the field of quality inspection of fish and fish products being in force in Poland.

S.J. Demby, MSc. (eng).

Determination of the fat content in fish and fish preserves according to the extraction method

Use of modern instrumental methods in assaying fish preserves for the presence of noxious metals

RYBEX
recommends excellently
tasting
and wholesome

Sole exporter
Fisheries Central Board
Foreign Trade Office

RYBEX

POLISH CUISINE

Salt water fish dishes

Meat of fish can successfully compete with the meat of slaughtered animals. Fish contain 14—20% proteins, mineral components, especially phosphorus, vitamin of B group, and fat fish, vitamins A and D additionally. Furthermore sea and Atlantic fish are also rich in iodine. They are characterized by fairly fat meat of a specific taste and are used for preparing many attractive dishes.
We wish to present to our Readers several of them, that are popular and specific for the Polish kitchen.
Good Appetite!

Fried Fish Sauté

1kg fish, juice of one lemon, a teaspoon of tarragon, salt, pepper, 8—10 dkg fat, 2 tablespoons flour

Clean and wash the fish, cut it with a sharp knife lengthwise and cut slices of meat lengthwise, cutting through the bones at the bottom of the spine. Cut the fillets obtained in this manner crosswise into portions, sprinkle with tarragon. Coat each portion on flour and fry on hot fat. When the fish is browned, sprinkle with salt and pepper, cover the dish and put into the oven for several minutes so that it would "be done". Serve with potato purée or French fried potatoes and raw vegetable salads.
Fish prepared in this way can be served not only hot, with raw vegetable salad, but also with cold sauces as a snack or it can be utilized as a semi-product for the preparation of other excellent fish dishes for which recipes are given below.

Fish in a Sweetish Onion Sauce

1 kg fish, a large carrot, parsley root, 15 dkg onions, 3 dkg butter, a tablespoon of flour, 2 tablespoons grated honey cake, 2 tablespoons honey, 2 dkg raisons, 2 dkg almonds, half a lemon, half a glass of red wine, salt, pepper, allspice, sugar

Slice a cleaned and dressed fish and boil it together with the head in a salted vegetable stock. Strain the stock, add the grated honey cake and boil, adding flour blended in melted butter. Set aside when it thickens, pour in the wine, lemon juice and honey, mix, season to taste with salt and spices. Mix the sauce prepared with the washed raisins and almonds, which should be chopped after the wastes have

Pour the sauce over the fish and serve hot or cold as an entremet.

Stewed Fish with Mushrooms

1 kg fish, 50 dkg mushrooms, 15 dkg onions, 8 dkg fat, 10 dkg sour cream, a tablespoon of flour, salt, pepper

Clean the fish, remove the entrails and cut into fillets, then cut them crosswise into portions. Coat slightly with flour, brown slightly on fat, salt. Remove skin from the onion, dice it and brown on the remaining fat. Add the cleaned and finely sliced mushrooms to the browned onion and stew under cover on a low fire for about 1 hour, mixing it from time to time. Then put in the fish and stew on a low fire for about 15 min, cover with sour cream. Season to taste with pepper and salt. Serve immediately after it is done, with boiled potatoes or noodles and raw vegetable salads.

Fish Stew

1 kg fish, 50 dkg mixed vegetables (carrot, parsley root), 15 dkg onions. 1 bay leaf, salt, a tablespoon of flour, a tablespoon of butter, 2 tablespoons of finely chopped dill, 2 glasses of sour cream

Clean, wash and cut up the fish into slices and boil in a stock with salt and bay leaves. Strain the stock after boiling it a half hour, pour into a kettle, bring to a boil. Melt the butter, blend in the flour thin it with the vegetable stock, bring it to a boil mixing it and then set aside. Add the sour cream to the sauce, season to taste. Mix the sauce with dill. Pour the sauce prepared over the boiled fish. The carrot and parsley root, boiled in the stock and finely chopped can be add-

loosely boiled rice or with macaroni. Raw cucumber salad or green lettuce are the most proper raw vegetable salads.

Fish au Gratin in a Béchamel Sauce

1 kg fish, 50 dkg mixed vegetables (carrot, parsely root, celery, leek), 15 dkg onion, salt, pepper, 1 bay leaf or cloves, 5 dkg butter, 4 dkg flour, 1.5 glass milk, 2 egg yolks, salt, 3 dkg yellow cheese

Boil a dressed and washed fish, cut into pieces, in a salted vegetable stock with spices. Then leave it in the stock until it cools, strain and put it on a refractory platter, pouring over it a béchamel sauce prepared as follows: melt the butter, add the flour. blend and thin with milk and several tablespoons of the fish stock, bring to a boil and set aside. Mix part of the sauce with yolks, pour into the hot sauce, blend, season to taste with salt. Sprinkle the fish, covered with sauce, with the grated cheese, put into a warm oven and bake.
Serve immediately after browning, with boiled potatoes and a vegetable salad.

Mackerel Tripe

1 kg mackerels (or other fish), 20 dkg carrots, 10 dkg parsley root, 20 dkg onions, 10 dkg celery root, a tablespoon of flour, 5 dkg fat, salt, pepper, ginger, marjoram, cayenne pepper

Dress and wash the fish, cut lengthwise with a knife. Remove the fishbones together with the spine from the halves obtained. Cut into strips of about 1 cm width, coat with flour and fry lightly on fat. Cut into strips the pared and cleaned vegetables and stew separately in the remaining fat. When

the fish, stew for a while, season it with salt and spices. Serve hot with potatoes and raw vegetable salads.

Fish Hungarian Goulash

1 kg fish, 20 dkg onions, 5 dkg fat, 2 dkg flour, 3/4 glass sour cream, salt, cayenne pepper, 2—3 tablespoons of finely chopped greens

Wash, clean and dress the fish. Cut into thin slices and brown lightly on fat. Brown the diced onion on the remaining fat. Put the fish, together with the onion, into a kettle, sprinkle amply with cayenne pepper, salt, pour a glass of boiling water over it and stew slowly under cover for about 20 min. Thicken the sauce with flour blended with several tablespoons of cold water, bring to a boil, add the sour cream, season to taste. Amply sprinkle the fish laid out on a platter with finely chopped parsley and dill. Serve with boiled or semi-French dumplings and with a white cabbage raw salad or with lettuce.

Carangid or Gildhead in a Sharp Sauce

1 kg fish, 2 onions, 2 carrots, 2 parsley roots, a lemon, 2 cloves garlic, a bay leaf, 2 dkg butter, salt, pepper, 2 slices of brown bread

Cut a cleaned and washed fish into portions, place in a kettle, sprinkle with finely chopped vegetables, sprinkle with salt, add pepper and a bay leaf, finely chopped bread and butter, pour over with boiling water. The fish should be covered by water. Stew under cover for about 20 min. When the fish is done, force the sauce through a sieve, season to taste with salt and papper. Mix with finely chopped or ground garlic. Serve with potatoes or with rice and raw

Halibut Stuffed with Rice

1 kg halibut, or Norway Haddock, half a teaspoon tarragon, 1.5 glass rice, 2 onions, 3 tablespoons chopped green parsley, 10 dkg olive oil, 3 tablespoons tomato puree, salt, sugar and cayenne pepper to taste

Sprinkle the inside of a washed and dressed fish with tarragon and fill with the stuffing prepared in the following manner: rinse the rice and boil in a large amount of water. Strain when soft and rinse with water when on the sieve. Dice a peeled onion and brown to a golden colour on the olive oil. Mix with the rice, add the tomato puree, green parsley, season with salt, sugar and pepper to taste. The filling should be sharp. Put the stuffed fish into a long dish and bake in the oven or — with an addition of 2—3 tablespoons olive oil and a glass of broth — stew on a low fire.
Serve in the same dish as a dinner course with lettuce or raw vegetable salad.

Spicy Haddock or Cod

1 kg fish, 2 onions, 50 dkg mixed vegetables (carrots, parsley, celery root, leek, cabbage), a glass of wine, a roll, 2 tablespoons butter, salt and cayenne pepper to taste

Cut the pared and washed vegetables into thin macaroni-like strips. Slice the onion into thin pieces. Mix all the vegetables and stew on part of the butter, with a glass of boiling water. When they begin to become soft — add the roll, cut into thin slices and the previously cleaned and washed sliced fish. Sprinkle with salt and cayenne pepper. Stew for about 30 minutes. When it becomes soft — add the rest of the butter, season with salt and cayenne pepper. Put on a platter, amply sprinkle with chopped green parsely. Serve with dumplings or potatoes and with raw vegetable salads.

Baked Fish in Horseradish Sauce

1 kg fish, a tablespoon of butter, 1 glass of sour cream, or a half glass each of milk and sour cream, half a tablespoon of flour, 2 egg yolks, 2 tablespoons grated horse radish, salt, sugar

Cover a dressed and washed fish with slices of onion and set aside to stand for 30 minutes. Remove the onion after this time has elapsed. Put the fish on a greased refractory platter. Then spread it with the remaining fat, put into the oven and brown it quickly. Remove from the oven and pour a sauce over it, prepared as follows: blend sifted flour with sour cream and egg yolks, add half of the horseradish, salt, add a little sugar. Put the fish covered with the remaining horseradish after removing if from the oven. Serve with boiled

Fish à la Nelson

1 kg fish, 20 dkg fat, 1.5 tablespoons flour, 1 kg potatoes, 3 dkg dried mushrooms, 20 dkg onions, 1 glass water, cream, salt, pepper, 2—3 tablespoons chopped greens

Wash the mushrooms, boil until soft, then remove from the stock and chop finely. Boil the washed potatoes in the jackets (about 15 minutes), pare and slice. Fry the onions, cut into semi-circles, on fat. Wash and dress the fish, remove bones. Cut the meat into pieces of ca 2—3 cm width, sprinkle with flour and brown on fat. Grease a kettle or a pressure cooker with fat and put into it potatoes, onions mixed with mushrooms and fish, in layers in such a way that the first and last layers would be potatoes. Sprinkle each layer with salt and pepper. Blend the cream into the mushroom stock, salt and pepper to taste. Pour the brew prepared in such a way over the fish and bake in a hot oven or in a pressure cooker.
Serve as a dinner dish in the kettle in which it had been baked, sprinkling the top with finely chopped greens. A raw vegetable salad is a desirable additive, lettuce or raw cabbage being preferable.

Stewed Fish in Tomatoes

1 kg fish, 50 dkg tomatoes or 10 dkg of tomato paste, half a glass of sour cream, a heaping tablespoon of flour, 6 dkg fat, 15 dkg onions, salt, pepper, sugar, 2—3 tablespoons finely chopped greens

Wash, clean and dress the fish. Cut into pieces, sprinkle with flour and brown lightly on fat. Cut the peeled onion into fine pieces and brown to a golden colour. Add the sliced tomatoes to the onion or tomato paste mixed with a glass of water, and the fish at the end. Stew 30 minutes under cover. Season to taste with salt, sugar and pepper. Sprinkle amply with finely chopped green parsely after removing it to a platter. Serve hot with potatoes or noodles and a raw cabbage salad.

Atlantic Fish Goulash

75 dkg fish, a teaspoon of mixed seasonings, 3 onions, 5 dkg fresh bacon, 2 tablespoons flour, half a glass of sour cream, salt and cayenne pepper to taste, 2 tablespoons chopped chives and green parsley

Dice a cleaned and washed fish into coarse cubes, sprinkle with seasonings and let stand for an hour. Chop a peeled onion finely, brown on fresh bacon to a golden colour, mix with flour and dilute with two glasses of water or vegetable stock, add cayenne pepper and salt. Put the fish prepared into the sauce, stew under cover until tender, add sour cream to the sauce, mix in the greens. Serve with lettuce or raw vegetable salad and with po-

Fish in Cabbage

1 kg fish, 1 kg cabbage, 2 onions, 3—4 apples, 2 tablespoons tomato paste, 10 dkg fresh bacon, salt, cayenne pepper, 2 tablespoons grated yellow cheese, a tablespoon of chopped dill or green parsley

Cut a peeled onion into small cubes and fry on fresh bacon to a golden colour. Clean the cabbage, rinse, slice and put into the kettle with the browned onion, salt and stew until soft, then add the pared and sliced apples, the tomato paste and the fish cut up into portions. Stew until soft, season with salt and cayenne pepper to taste. Put on a platter, sprinkle with grated cheese, put into a warm oven for a little while. Sprinkle with greens and serve with potatoes and a raw vegetable salad.

Atlantic Fish Fricassée

1 kg fish, 2 onions, 3—4 field champignons (Boletus), 5 dkg olive oil, 2 tablespoons flour, juice of one lemon, 2 egg yolks, salt, 2 tabs chopped green parsley

Cut a peeled onion into fine pieces and stew lightly on olive oil. Clean, wash and chop finely the field mushrooms and add to the onion. Stew all the ingredients together and mix in the flour after a while, pour over with two glasses of water. Put the dressed and washed fish, cut up into portions, into the sauce and stew until soft. Squeeze the juice of one lemon into the sauce, blend in the yolks. Season to taste and add the greens. Serve with loosely boiled cereal and raw vegetable salads.

Fish Stuffed with Rice

1 kg fish, 15 dkg rice, 15 dkg onions, 10 dkg fat, 2 tablespoons chopped green parsley, salt, pepper, ground cayenne pepper

Clean, wash fish and rub with powdered spices. Rinse the rice, boil to a half-loose state. Cut the onion into cubes, stew with part of the fat, add to the boiled rice, mix, season to taste with salt and cayenne pepper, mix with the chopped greens. Stuff the fish with the stuffing prepared in this way, place on a greased oven pan or refractory platter, grease and sprinkle with salt and cayenne pepper and bake in a hot oven. Serve with mushroom or tomato sauce and with raw vegetable salads.

Stuffed Fish

1 kg fish, one roll, half a glass of milk, 10 dkg onions, 5 dkg butter, 2 eggs, 5 dkg celery root, 40 dkg vegetables (carrot, parsley root, onion) bay leaf, salt, pepper

Wash and clean fish, rinse, remove skin, remove bones from the meat and put through a grinder together with the roll soaked in milk. Finely chop a peeled and rinsed onion and stew in part of the fat, add to

ed). Mix the mass, adding a yolk at a time and blend in the whipped whites of the eggs. Season with salt and pepper to taste. Form a roller from the mass prepared and tightly roll up in a clean napkin, previously greased with butter. Tie the wrapped up roulade with a clean string and boil in the vegetable stock adding a bay leaf, pepper and salt. Uncover the boiled fish, place it on a platter and cut into oblique slices. Garnish the platter with vegetables cut out decoratively and with green leaves. Serve hot with horseradish sauce, potatoes and a raw vegetable salad, or cold — with a sharp sauce (tartar, mustard) and with vegetable salads.

Fish Pudding

1 kg fish, 3 dkg yellow cheese, 4 eggs, 5 dkg butter, 3 dkg flour, glass of milk, 2 tablespoons breadcrumbs, salt and pepper, 2 tablespoons chopped green parsley, fat and bread crumbs for sprinkling the mould

Grease the mould, sprinkle with breadcrumbs. Wash the fish, dress, rinse, remove skin, remove bones from the meat. Force the meat through a meat grinder. Melt the butter, blend in the flour, dilute with milk and bring to a boil. Beat the thick sauce obtained with the yolks and add to the fish mass, mix in the breadcrumbs, greens, grated cheese and stiffly whipped whites. Season to taste with salt and pepper, close tightly. Put the mould into a dish with boiling water and boil under cover for 1 hour. If there is no pudding mould, bake the pudding in an oven or pressure cooker. When done, put on a platter, serve hot with a horseradish, cream or mushroom sauce and with raw vegetable salads or with boiled vegetables — spinach, for instance.

Fish au Gratin with Macaroni

75 dkg fish, 4 dkg yellow cheese, 35 dkg spaghetti, 2 eggs, half a glass condensed milk, 2 tablespoons tomato paste, salt, pepper, 5 dkg fat, breadcrumbs and fat for greasing the platter

Grease a refractory platter or a pressure cooker and coat with breadcrumbs. Cut the fish into narrow strips after it has been dressed and after fishbones have been removed, and stew them in fat, sprinkle with salt and pepper. Boil the macaroni, strain and rinse with warm water, mix with the cheese, tomato paste and eggs blended with condensed milk, season with salt and pepper. When the macaroni has been prepared in the way above, place it in two layers on a platter or in a pressure cooker, putting the stewed fish between the two layers and bake it in an